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Report on the Quality of Marine Surface Observations

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July to December 1999

Data Assimilation
The Met. Office, Bracknell

REPORT ON THE QUALITY OF MARINE SURFACE OBSERVATIONS:

JULY TO DECEMBER 1999

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Quality Evaluation Team Leader, Mr. D. A. Jenkins

For further information on or copies of this report, please contact:

Manager of Observation Monitoring,
Room 343,
Meteorological Office,
London Road,
Bracknell,
Berkshire,
United Kingdom.
RG12 2SZ

E-mail: bmacpherson@meto.gov.uk

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1. INTRODUCTION

In 1985, the Commission for Basic Systems (CBS) agreed that there was a need for GDPS / Global NWP centres to monitor the quality of observations available on the GTS and to exchange monthly lists of those stations providing observations which seem in error. In 1988 three lead centres were nominated which would have a co-ordinating role of producing, at six-monthly intervals, consolidated lists of suspect stations for given data types together with information on the nature of the error. The Met. Office was allocated the role as lead centre for marine surface observations which encompass observations from ships, drifting buoys, moored buoys and other fixed marine platforms. This is the twenty-second of its reports and covers the period July to December 1999. For each observing platform identified as suspect, values are supplied for the number of observations received at The Met. Office, the number of these observations with gross errors, the observations' mean differences from the background values used by the numerical data assimilation system and the standard deviations of these differences.

Following the CBS recommendations, four centres have been active in exchanging monitoring information each month; The Met. Office since August 1987, ECMWF since August 1988, RSMC Tokyo since September 1988 and NCEP Washington since August 1989. At first, the only monitoring information exchanged on marine surface observations related to pressure, and the first two WMO reports were restricted to that parameter alone. All four centres now regularly monitor wind observations and such results are contained in this report. In addition, the report contains monitoring results for sea-surface temperature (SST). Due to changes which have been made to the observation processing system and database structure at Bracknell, however, there has been no monitoring of SST data at this centre since May 1998. For this reason, the SST information presented herein, has been compiled, with permission, from the monthly NCEP monitoring reports and is not, therefore, directly comparable with that in previous reports. Unfortunately, NCEP themselves have suffered computing problems which have resulted in an absence of monitoring data for all of September and half of October 1999. This has not affected the identification of SST suspects but may have distorted the usefulness of quoting the number of times an observing platform has appeared on suspect lists. It is now hoped that SST monitoring data from The Met. Office will be available for use from the next report onward, although data for a complete six-month period may not be present until report number 25.

2. MONITORING METHODS

Errors in observations may arise from a number of sources: the instrument may be malfunctioning, figures may be mistaken while being transferred manually, or there may be corruption of data during transmission. Errors can also arise in the pressure report if the adjustment to sea level is made incorrectly or not at all, and a poorly sighted anemometer can result in errors in the observations of wind. For SST observations, the depth at which the observation is made can be crucial. "Surface" observations from buoys are usually made at a depth of around 0.5m, whereas ships may take a measurement between a depth of 10m and the surface, depending on the method used. At present, there is no indication given within the report of the observation's depth, so it is not possible to determine the significance of this factor. (By contrast, satellites measure the temperature of the ocean's "skin" which is generally slightly cooler than the temperature immediately beneath, by several tenths of a °C, as a result of evaporative cooling and other surface processes.)

Some errors can be detected by applying checks on the code format and the internal consistency of the report (for example: are the position and pressure consistent with a report 6 hours earlier?). Checks on spatial consistency may be made if there are other nearby observations. However, such quality checks are unable to identify errors on all occasions and it is recognised that the numerical data assimilation systems in use today can provide global reference values which have a valuable application in the area of observation monitoring. The short-term forecast from the previous numerical analysis, commonly known as the first-guess or background field, provides perhaps the most useful information on observation quality, as it represents an accurate and spatially consistent estimate of the observed value which is independent of the observation itself. Observation-minus-background (hereafter referred to as O-B) differences are at the core of all monitoring work by GDPS centres. For sea-surface temperature, it has not, in previous reports, been possible to use a background field with which to compare the observed values, as is done for wind and pressure observations, since no forecast of SST is performed at The Met. Office. Instead, the analysis field has been used; a sufficiently good approximation due to the slowly varying nature of SST, relative to parameters measured above the surface. (These analyses are performed daily at The Met. Office from an assimilation of both surface and satellite observations.) There is one drawback in using the analysis field as an alternative: it is dependent upon the observations themselves. This is a major limitation when it comes to assessing observation quality since the results are not straightforward to interpret. Since, however, the SST information presented in this report is derived from the monthly NCEP monitoring reports, it is based on the O-B data therein.

Taking all marine surface observations together, the values of O-B have distinct characteristics. The vast majority of the observations show quite small departures from background and the distribution of O-B is nearly Gaussian, with little or no bias. The errors in the background field probably contribute most to the values of O-B for these observations. There is often, however, a smaller group of observations departing much more from the background, for which observation error is the only reasonable explanation for the large values of O-B. Studies of the distribution of O-B and its variation at different points around the globe enable reasonably accurate estimates of background error to be made, and this provides the basis for the monitoring methods described here. Those marine observing platforms for which, in a sufficiently large sample, the observed values of pressure or wind differ from the background by an amount significantly in excess of the estimate of background error, may be labelled as suspect with a high degree of confidence. The limits used here to identify suspect observing platforms have been set sufficiently stringent to preclude much likelihood of the background, rather than the observations, being in error.

Each monitoring centre produces a monthly list of the identifiers of marine observing platforms considered suspect according to the departure from the centre's background values. All observations, both synoptic and asynoptic, are assimilated. At The Met. Office, Tokyo and Washington, the corresponding background value used is that valid at the nearest main synoptic hour. At ECMWF, however, interpolation in time is performed.

Given that the number of observations made during the month is greater than or equal to 20, then the condition used by all centres for obtaining platforms for the suspect lists is that at least one of the following criteria are satisfied:

Pressure

1. the | mean of O-B |	≥	4.0 hPa
2. the standard deviation of O-B	≥	6.0 hPa
3. the percentage of gross errors	≥	25

Wind

1. the | mean of O-B |	≥	5.0 ms^{-1}	(Speed)
	≥	30°	(Direction)
2. the standard deviation of O-B	≥	80°	(Direction)
3. the percentage of gross errors	≥	25	

A gross error is defined as an observation which departs from the background by more than 15hPa (Pressure) or 25ms^{-1} (Vector Wind). The mean and standard deviation of the samples are evaluated excluding gross errors and in this way occasional 'wild' values resulting from, for example, corruption during transmission, do not influence the sample characteristics. Direction statistics are also calculated excluding values in light winds, where either the observed or background speed is less than 5ms^{-1}.

Relatively little information is exchanged between centres on a regular monthly basis for SST.

The monthly results for pressure from all four monitoring centres show considerable agreement, both on the observing platforms listed as suspect and the values of the mean and rms difference from each centre's background. Differences between the monthly suspect lists are usually due to the different numbers of observations available at each centre. The cut-off varies between 6 and 24 hours. There are also some unexplained variations in the data receipt between the centres, which may be due to problems in the GTS or in the local procedures for handling the data. Monitoring results for wind speed also show reasonable agreement on the mean and standard deviation from each centre's background; there is less agreement as to which platforms are listed, reflecting the greater uncertainty when monitoring wind speed.

This report draws together all the monthly monitoring results exchanged on marine surface data and identifies a list of observing platforms that have provided observations of poor quality over the 6-month period. In drawing up this list, there have been a number of guiding principles:

1. As with the monthly lists, accuracy is assessed relative to background values.
2. Only those observing platforms are listed for which there is a very high degree of confidence that the observations rather than the background values are in error.
3. At least 40 reports are required over the period in which the observations are considered suspect.
4. The perceived accuracy over the last part of the six-month period is of greatest importance; observing platforms will not be listed if there has been recent improvement and their reports are at present without major error.
5. Given that the number of observations made during the period is greater than or equal to 40, then the condition for listing a platform as suspect in this report is that at least one of the following criteria are satisfied:

Pressure

1. the | mean of O-B |	$\geq$ 3.5 hPa	
2. the standard deviation of O-B	$\geq$ 5.0 hPa	
3. the percentage of gross errors	$\geq$ 25	

Wind

1. the | mean of O-B |	$\geq$ 5.0 ms^{-1}	(Speed)
	$\geq$ 30°	(Direction)
2. the standard deviation of O-B	$\geq$ 6.0 ms^{-1}	(Speed)
	$\geq$ 60°	(Direction)
3. the percentage of gross errors	$\geq$ 25	

SST

1. the | mean of O-B |	> 4.0 °C	
2. the standard deviation of O-B	> 6.0 °C	
3. the percentage of gross errors	$\geq$ 25	

All observations having gross errors are excluded from the calculation of the mean and standard deviation of O-B. The same gross error limits apply in these reports as in the monthly lists. The Met. Office normally set a limit of 5 °C for SST, although this does not apply to the data presented in this report since the monthly statistics from NCEP are based on a limit of 15 °C. This is one of the reasons why this data is not directly comparable with that presented in previous reports. Additionally, the criteria previously used by The Met. Office for these reports have been based on rms O-A and gross errors only. Aside from this, even if the same monitoring methods were used at The Met. Office and NCEP, there would always be a risk associated with treating the results obtained using different models as comparable.

The limits set on the bias and standard deviation of O-B are slightly less stringent than those for the monthly lists because the sample sizes are larger. They are only applied over the last part of the period if there has been a recent deterioration in quality. It is possible that there are a few observing platforms listed in this report which have not appeared on any of the monthly lists. This can occur if they report infrequently and only produce a large enough sample over a period of several months or if deterioration occurs at the end of the period; for a platform which reports very frequently. The 6-month list is longer than most of the monthly lists because many ships cease reporting for variable periods of time, presumably in most cases while they are in port or out of service. Only over a relatively long period, probably more than 6 months, is a representative sample obtained from all those ships providing observations.

3. MONITORING RESULTS

The monitoring results presented in this report relate only to data exchanged over the GTS. Observations from marine platforms are transmitted in one of two formats: the SHIP code, used for most observations from ships, moored buoys and other fixed platforms, and the BUOY code, used mostly for observations from drifting buoys. In this report the term "ship observations" refers to those received in the SHIP code and the "drifting buoy observations" to those received in BUOY code. The SHIP code indicates whether the observation was made manually or by an automatic system and accordingly the sub-divisions "manual ship" and "automatic ship" will be defined.

N.B. During the period of this report there has been no monitoring of SST data at The Met. Offcie although SST information is presented, with permission, which relates to the monthly monitoring reports from NCEP. This situation has arisen due to the changes which have been made in the observation processing system at Bracknell and the consequent changes to the databases used for monitoring. It is now hoped that the monitoring of SST data will be resumed, giving monitoring results for use in these reports, during the period January to June 2000.

3.1 Pressure

In the six month period, July to December 1999, 1 720 690 observations of pressure were monitored at Bracknell from 6 756 manual ships, 357 drifting buoys, and 350 automatic ships. The number of reports received from individual ships varies greatly as Table 1 demonstrates; apparently, a large percentage only report once. The reason for this is unclear but it may be a result of errors in the part of the message giving the ship identifier. A comparison with the corresponding table in report number 21 shows an increase in the numbers of reported identifiers for both manual and automatic ships but a a small decrease in the case of drifting buoys. Since most marine observations are located in the northern hemisphere, there is inevitably some seasonal variation in the number of vessels reporting, especially in the case of buoys, since new or replacement buoys are generally deployed in better weather conditions. Considering the general trends over previous reports, however, shows that the recent stabilisation in numbers of drifting buoy and automatic ship identifiers has continued during this period.

Table 2 shows the number of observations of pressure that have been received over the GTS at Bracknell and processed, over past 6-month periods. Due to changes in data storage methods at Bracknell in May 1991, report number 5 covered the period January to May 1991 only, thence figures for January to June 1991 have been scaled-up in order to make a fair comparison with other 6-month periods; this may not be entirely accurate. Further changes in November 1993 for drifting buoys and automatic ships for pressure and winds, may have allowed duplication of a few identifiers in totals for the period June to December 1993, as reclassification from one observation type to another occurred. The observation distribution shown in Table 2 will also have been affected in the long term with a slight shift towards drifting buoys; no duplication of observations occurred however. SST observations were not affected by the November 1993 change. The period January to June 1998 is also based on only 5 months data (February-June), but the numbers of observations received have been scaled up, as in the 1991 case.

Figure 1 shows the information presented in Table 2 more clearly. It can be seen that the total number of observations remained fairly steady with only minor fluctuations until report number 11 (January-June 1994). Since that time however, there has been a steady increase in the total, with the number of observations of pressure nearly doubling between reports 11 and 16 (July-December 1996), a period of just 2.5 years. This increase was due to the increase in the number of reports from each drifting buoy, as reliability has improved; many drifting buoys now make over 2,000 pressure observations during a 6-month period. The number of reports from drifting buoys now exceeds those for manual ships by around 70%, with a little under half of all marine pressure observations now being made by drifting buoys. The sudden increase seen in the number of automatic ships in report number 19 (January-June 1998) was due to observation processing changes at The Met. Office, whereby all reports from 'automatic ships' are processed, rather than only one report per 6-hour assimilation period, as previously.

A histogram of O-B differences for all ship pressure reports in the period July to December 1999 is shown in Figure 2a, together with the Gaussian distribution with the same mean and standard deviation. Although almost all values fall within the range +5 to -5 hPa, a small number of much larger values, presumably resulting from erroneous observations, contribute to the large standard deviation of the population. The distribution for all those observations which fail the automatic quality-control checks is broad (Figure 2b). The remaining 96 per cent of the observations which pass the quality checks show a distribution of O-B which is very close to Gaussian (Figure 2c) with mean -0.2 hPa and standard deviation 1.4 hPa; the principal contribution to the standard deviation is assumed to be from background errors.

A global estimate of the background error, such as that provided above, will conceal large spatial variations which may occur. Background values will be more accurate in data-rich areas (e.g.: in the North Sea or Mediterranean) or where the meteorological variability is low (e.g.: the tropics). The geographical distributions of the mean and standard deviation of the values of O-B from all ship observations which pass the quality-control checks, have been calculated for 10-degree latitude-longitude boxes and are plotted in Figures 3 and 4. In most areas the magnitude of the mean is less than 0.5 hPa, the exceptions being generally where the sample size is small. The standard deviation is generally around 1.5 hPa, but larger in the southern oceans; 2.5 hPa or more. The number of ship pressure reports accepted by the model quality control in each 10-degree box is shown in Figure 5.

Table 3 contains a list of those ships and drifting buoys considered to have produced suspect observations of pressure in the period July to December 1999. Values over the six-month period are given for the number of observations of pressure available for The Met. Office global model runs, the number of observations differing from the model background value by more than 15 hPa (gross errors), and the mean and standard deviation of the model O-B. The number of times the identifier has appeared on the monthly suspect lists from the four monitoring centres is also given. In order to give a detailed picture of the frequency of reporting and any changes in the observation accuracy, 6-month time-series of O-B differences are given at the end of the report for each of the identifiers listed.

An interesting characteristic of the errors identified here, which soon becomes obvious on inspection of the time-series charts at the end of this report, is that most can be attributed to a bias in the observed pressure. In many cases the bias is constant over the whole monitoring period. There are some values which appear to depart greatly from the sample mean, presumably due to some gross error in the observation, but generally they are isolated instances. In only a few cases are there regular large random departures from background. Those observing platforms listed in Table 3 which appeared in report number 21 (January to June 1999) have been indicated with an asterisk. A comparison of the statistics given here with those in the report number 20 (July to December 1998), clearly indicates that the bias in the pressure observations from a few ships has hardly changed for more than a year.

Statistics for those marine observing platforms which were listed in report number 21 and which do not appear in Table 3b, are given in Table 4 along with comments on the quality of their pressure observations. Time-series charts of the pressure observations from these platforms are not given. Less than 40 reports were received in the 6-month period for many of the ships on this list. However, approximately 60% of the ships show some improvement in the quality of their observations.

3.2 *Wind*

The monitoring of observations of wind, presents more problems than for pressure. On the majority of observing platforms, wind is measured using anemometers; the reported speed is dependent upon the averaging period and the height of the instrument above sea level, which varies a great deal from platform to platform. Since wind flow is distorted by large structures, factors affecting the wind measurement also include the siting of the anemometer and the bearing of the wind with respect to the structure. (The factors outlined above do not apply to those ship observations where wind speed is based on visual estimates of the sea state.)

In these monitoring results, the background winds are valid at a height of 10 metres above mean sea level; slightly lower than the average height of ship anemometers. Where anemometer height is much different from 10 metres, a significant O-B speed bias may be evident. Examples of this are, observations from oil rigs or tankers with anemometer heights of 50m or more and buoys, where the anemometer can be as low as 2m.

In the period July to December 1999, 858 046 wind observations were available for monitoring at Bracknell, from 6 265 manual ships, 123 drifting buoys, and 370 automatic ships. (More detail is given in Table 1.) The number of reported manual ship identifiers has increased by approximately 10% continuing the trend seen over the last two years. Numbers automatic ship identifiers have stabilised during this period, ending the recent downward trend. Despite a small decrease, the number of reported drifting buoy identifiers is still greater than for any period prior to 1998, probably due to the larger proportion of buoys now being deployed carrying anemometers. As stated for pressure observations, the large increase in the number of monitored wind observations, seen in report number nineteen, was largely due to the inclusion of all 'automatic ship' data, not just one report in each six hour period.

Histograms of O-B differences for ship observations of wind speed are presented in Figures 2d to 2f and of wind direction in Figures 2g to 2i. As with observations of pressure, those wind observations which fail the quality-control checks differ most from background, some by as much as 50 ms^{-1}, and they make a large contribution to the variance of O-B. The distributions of O-B wind speed and direction for the remaining 90 per cent of the observations are nearly Gaussian. There is a speed bias of +1.0 ms^{-1} relative to background, with a direction bias of just -1.9°.

Figures 6 and 7 show the geographical distributions over the six-month period of the mean and standard deviation of O-B for ship observations of wind speed which pass the quality-control checks. The numbers of wind reports used to generate these statistics are presented in Figure 8. The standard deviation of O-B wind speed is typically 2.5 to 4 ms^{-1} in middle latitudes and 2 to 3 ms^{-1} in the tropics. The bias is generally around +1 ms^{-1}, but exceeds +2 ms^{-1} in a few places. Similar distributions of the mean and standard deviation of O-B wind direction are shown in Figures 9 and 10. Only reports where both the observed and background wind speeds are greater than 5ms^{-1} were used to obtain these values. The magnitude of the bias is less than 10 degrees in most places. The standard deviation is generally between 20 and 30 degrees globally, but in some data-sparse areas it is as large as 40 or 50 degrees. The numbers of reports of wind direction used to generate these statistics are presented in Figure 11.

Figures 6-11 provide reference values against which the characteristics of O-B for different marine observing platforms may be compared. Table 5 contains a list of those ships and drifting buoys considered to have produced suspect observations of wind speed in the period July to December 1999, and in Table 7 a similar list is provided for wind direction. Values are given for the number of observations of wind received at The Met. Office, the number of observations having a vector difference from background of more than 25ms^{-1} (gross errors), and the mean and standard deviation of O-B. Time-series of O-B for each identifier listed are given at the end of the report. In the majority of the cases of suspect speed observations, a constant bias is clearly evident. Errors in observations of direction are more random in nature. Tables 6 and 8 contain statistics for platforms reporting in ship code which are not included in Tables 5 and 7 but that were listed in the previous report, for wind speed and direction respectively. Time-series plots for these identifiers are not included in this report.

3.3 Sea-surface temperature

Since there has been no monitoring of SST observations at The Met. Office during the period covered by this report, the results presented here, derived, with permission, from the monthly suspect lists published by NCEP, are much less comprehensive than those in previous reports. It has not been possible, for instance, to determine either the number SST observations received over the GTS or how many of each observation platform type have been operational during the period (as indicated in Table 1). Usually, however, drifting buoys provide a substantial proportion of the total number of SST observations received, despite their numbers being relatively low. This is due to the frequency of buoy observations; hourly in many cases, with ships tending to report only at the main synoptic hours.

It has not been possible to produce any of the figures normally used to represent SST statistics; observation numbers, mean O-A, standard deviation O-A. These typically show overall biases of small magnitude (≤ 0.1 °C) for all observation types. It is usually the case that ship observations have a standard deviation O-A which is approximately double that for both fixed and drifting buoys. This is partly due to both the frequency of buoy reports, relative to those from ships, and their quasi-constant location, giving them increased weight in the analysed field. As a result of the small number of SST observations at high latitudes and hence, particularly in the Southern Hemisphere, the decreased reliability of the analysis, the largest O-A biases tend to occur in these areas. (The coverage provided by drifting buoys is extensive, the exception being tropical areas of the Atlantic, and the Polar Regions. Fixed buoys, however, tend to be largely concentrated in coastal regions, with particularly high observation densities around the UK and the USA, as well as Japan and Hawaii.)

Table 9 contains a list of the ships and drifting buoys considered to have produced suspect observations over the 6-month period. The comments given in each case provide an indication of the main reason for the station to be listed as suspect; for the reasons mentioned previously, time-series charts for SST have not been included in this report. The majority of the identifiers appearing on the list do so as a result of bias. As in reports number 20 and 21, the normal form of Table 10 has not been used, since statistics for the whole of the current period are not available. Instead, Table 10 shows those identifiers listed as suspect in the monthly NCEP report for December 1999, for which there is insufficient information to make a judgement as to the quality of the observations over a longer period.

4. SUMMARY

111 marine observing platforms are listed as producing suspect observations of pressure over the period July to December 1999, and 43 as producing suspect wind observations. 35 platforms are listed as producing suspect SST observations, as assessed from the monthly NCEP monitoring reports. The first report issued by RSMC Bracknell for the period January to June 1989, listed 150 marine platforms producing suspect observations of pressure. With the selection criteria remaining unchanged since then, an initial reduction in the number of platforms listed as suspect has been followed by a series of reports listing similar numbers of suspects. This still, however, seems to reflect an overall improvement in observation quality, when considered alongside the large increases, over the same period, in the number of observations monitored for each report. Although, as of report number 20, there have been increased numbers of wind observing platforms listsed as suspect, this still represents less than 1% of the total number of operational observing platforms which report wind data.

The most common characteristic of the pressure errors found here is a bias in the reported pressure which may remain constant for many months. The majority of platforms listed as producing suspect wind observations show a bias in the reported wind speed, while a few show large standard deviations or bises for wind direction. For sea-surface temperature observations, the presence of bias is again found to be the most common cause of error.

The selection criteria have been set sufficiently stringent to ensure that the platforms listed are only those for which there is a high degree of confidence in their reports having errors. There are a great many others, not listed here, for which there must be considerable doubt over the quality of the observations. A wider range of monitoring results is available from The Met. Office on request.

TABLE 1: FREQUENCY DISTRIBUTION OF THE NUMBER OF REPORTS OF PRESSURE, WIND AND SEA SURFACE TEMPERATURE FROM INDIVIDUAL IDENTIFIERS AVAILABLE FOR MONITORING AT BRACKNELL, JULY TO DECEMBER 1999.

Number of reports	Number of manual ships reporting			Number of drifting buoys reporting			Number of automatic ships reporting		
	Press.	Wind	SST*	Press.	Wind	SST*	Press.	Wind	SST*
1	3358	2927	-	65	56	-	192	177	-
2-10	948	880	-	16	14	-	58	55	-
11-20	269	260	-	6	1	-	1	1	-
21-40	347	363	-	7	4	-	5	8	-
41-100	593	622	-	20	6	-	8	13	-
101-200	606	625	-	21	6	-	11	10	-
201-500	562	525	-	58	13	-	20	64	-
501-1000	50	37	-	76	11	-	19	26	-
1001-1500	21	21	-	55	10	-	30	13	-
1500+	2	5	-	33	2	-	6	3	-
Total	6756	6265	-	357	123	-	350	370	-
(Report 21)	(5882)	(5698)	(-)	(370)	(126)	(-)	(326)	(357)	(-)

* numbers are for automatic (fixed) buoys only

TABLE 2: NUMBER OF OBSERVATIONS OF PRESSURE RECEIVED AT BRACKNELL ON THE GTS FOR EACH OF THE SIX-MONTH PERIODS COVERED BY THE WMO REPORTS ON THE QUALITY OF MARINE OBSERVATIONS.

Period	WMO report number	Number of Observations			
		Manual ships	Drifting buoys	Automatic ships	Total
Jan - Jun 1989	1	424087	174971	40082	639140
Jul - Dec 1989	2	421315	151972	58016	631303
Jan - Jun 1990	3	424335	177927	63847	666109
Jul - Dec 1990	4	412430	205488	71146	689064
Jan - Jun 1991	5	364760	177069	64401	606230
Jul - Dec 1991	6	348710	148604	68456	565770
Jan - Jun 1992	7	332443	216872	73893	623208
Jul - Dec 1992	8	336958	247873	80862	665693
Jan - Jun 1993	9	340293	288208	77317	705818
Jul - Dec 1993	10	348082	316261	88650	752993
Jan - Jun 1994	11	334134	279963	111928	726025
Jul - Dec 1994	12	383760	305618	142468	831846
Jan - Jun 1995	13	369781	407111	124537	901429
Jul - Dec 1995	14	394016	528938	138653	1061607
Jan - Jun 1996	15	430162	566035	122909	1119106
Jul - Dec 1996	16	477928	621869	133221	1233018
Jan - Jun 1997	17	446530	623835	122178	1192543
Jul - Dec 1997	18	453399	684292	140227	1277918
Jan - Jun 1998	19	426622	700743	423217	1550582
Jul - Dec 1998	20	443548	700239	497313	1641100
Jan - Jun 1999	21	432506	697983	466311	1596800
Jul - Dec 1999	22	448996	771624	500070	1720690

TABLE 3: LIST OF MARINE OBSERVING PLATFORMS REPORTING SUSPECT PRESSURE OBSERVATIONS OVER THE PERIOD JULY TO DECEMBER 1999.

Column 1 Call sign or identifier.
Column 2 Number of pressure observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of pressure observations differing by more than 15 hPa from background (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Columns 6-9 Number of times observing platform has appeared on suspect lists. B=Bracknell, E=ECMWF, T=Tokyo, W=Washington.
Column 10 Comments on quality of pressure observations.

Notes: 1. Units are hPa.
2. Observing platforms marked with an asterisk were listed in the previous report (January to June 1999)

Table 3a: Platforms reporting in BUOY code

*i): Platforms **non-operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
14914	188	6	3.6	5.1	1	1	1	1	Bias
17513	45	2	3.7	5.9	1	1	0	1	Bias
17904	59	6	5.6	5.6	1	1	0	1	Standard Deviation & Bias
17905	122	36	3.1	9.8	1	1	1	1	Gross Errors & Bias
23508	259	0	0.8	-5.4	2	2	2	2	Bias
33943	794	3	2.3	2.5	0	0	0	0	Bias from September
33946	1312	327	7.9	-1.8	4	5	3	4	Standard Deviation
33948	388	124	4.4	-1.0	2	2	1	1	Gross Errors
34913	707	0	3.3	3.8	2	3	1	1	Bias
41629	43	43	---	---	1	1	0	1	Gross Errors
41653	865	0	1.6	-0.6	1	1	1	1	Bias from November
41852	657	375	5.5	-1.4	3	3	2	2	Gross Errors & Standard Deviation
44629	1228	9	3.4	3.0	0	0	0	0	Drift of Standard Deviation & Bias
44764	1052	5	3.7	-1.8	1	1	1	1	Bias from August
44778	4174	17	2.0	-0.4	1	1	1	1	Bias from November
46925	527	0	2.1	-4.3	2	2	0	1	Bias
48580	57	37	0.3	14.4	1	0	0	1	Gross Errors
52542	116	116	---	---	1	1	0	1	Gross Errors
54809	142	142	---	---	2	0	0	2	Gross Errors
54811	109	109	---	---	2	0	0	1	Gross Errors

Continued →

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
54919	177	137	3.2	-10.0	1	1	1	1	Gross Errors
54923	932	0	1.2	-4.6	5	2	2	2	Bias
56608	100	96	1.6	-12.0	1	1	1	1	Gross Errors
61533	55	55	---	---	1	2	0	0	Gross Errors
61553	46	46	---	---	1	0	0	0	Gross Errors
62506	3277	3	3.2	-0.3	0	0	0	0	Bias Erratic; -7.5 at end of period
65593	4146	19	2.0	-1.0	1	1	1	1	Bias from November
73510	598	331	5.5	0.1	2	2	2	1	Gross Errors & Standard Deviation

*ii): Platforms **operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
31953	3192	38	4.2	3.0	3	2	2	3	Bias from October
44517	450	45	4.7	4.2	1	1	1	1	Bias drift
46768	2197	25	3.3	2.5	2	2	0	1	Bias at end of period
46910	1391	329	1.9	-0.3	2	2	2	2	Gross Errors increasing
46923	1208	1	2.3	0.0	0	0	0	0	Bias from December
52905	59	0	2.0	-4.2	1	0	1	1	Bias
54921	1246	23	0.9	3.3	0	0	0	0	Standard Deviation at end of period
61537	662	287	3.5	-0.1	1	1	1	1	Gross Errors
62554	4126	105	0.8	0.2	1	1	0	1	Gross Errors from November
71548	55	46	7.1	1.7	0	0	0	0	Gross Errors

Table 3b: Platforms reporting in SHIP code

Identifier		N Obs.	NGE	SD	Bias	B	E	T	W	Comments
3FEA4		46	0	1.2	-5.3	0	0	0	0	Bias
3FFE8		55	0	2.3	-3.1	1	5	1	1	Bias at end of period
3FGN3	*	126	1	2.1	-8.4	3	2	6	2	Bias
3FIC5		61	20	5.2	-2.9	1	0	2	0	Gross Errors & Standard Deviation
3FPA6		159	16	2.0	-1.6	0	0	0	1	Gross Error at end of period
3FTL6		45	0	1.8	-3.3	0	0	0	0	Bias at end of period
3FXT6		90	1	1.2	3.4	0	0	0	0	Bias at end of period
48101		703	703	---	---	2	2	1	1	Gross Errors
48102	*	1685	967	1.5	0.1	6	6	2	5	Gross Errors
48111	*	1129	685	1.9	0.1	3	3	2	2	Gross Errors
62125		634	4	2.5	2.6	3	3	3	3	Bias from October
62142	*	2881	1	1.0	4.2	3	3	3	2	Bias
8PNI		98	0	0.9	-4.2	2	2	2	2	Bias
9MCU		64	0	3.4	5.3	0	1	0	0	Bias
ATZS		89	5	5.1	-1.4	1	0	0	0	Standard Deviation
BOAB		205	1	2.3	-2.9	2	2	1	2	Bias from November
C6PE4	*	278	0	1.3	-3.2	0	0	0	0	Bias from December
C6YW		46	4	1.6	6.8	1	1	1	2	Bias
CYLX	*	60	21	0.8	-12.5	0	0	2	0	Bias and Gross Errors
DGSR		215	1	1.4	-3.1	0	0	0	0	Bias from December
ELJJ5		77	8	5.1	0.6	1	1	1	0	Standard Deviation
ELMQ	*	106	0	3.3	-2.7	2	2	2	2	Bias from November
ELNC5		47	2	4.0	-4.8	0	0	0	1	Bias
ELSV2		82	0	1.1	-3.3	0	0	0	0	Bias at end of period
ELTE6	*	160	1	1.2	-4.5	2	3	2	1	Bias
ELTE8		54	0	1.3	-3.9	0	0	0	0	Bias
ELUB5	*	89	2	1.6	5.9	2	2	1	2	Bias
ELVI2	*	354	1	1.2	-5.5	6	6	5	5	Bias
ELVJ9		474	0	1.0	-3.9	3	2	2	2	Bias
ELWR3		69	0	5.6	-4.1	1	1	1	1	Bias
KHLN		87	0	2.7	-2.8	0	0	0	0	Bias from November
KMJL		72	0	1.5	-3.2	0	0	0	0	Bias from August
LAEP4	*	95	0	2.1	-4.1	1	1	0	2	Bias
LAFQ5	*	173	7	1.7	-4.1	2	2	1	2	Bias
OZBW6	*	370	0	1.6	-3.7	1	1	1	1	Bias
OZLB		393	6	1.2	-4.0	4	2	1	2	Bias
P3YR5		317	2	2.9	2.7	2	2	1	1	Bias from November
P3YS5	*	328	0	1.6	4.2	5	5	4	3	Bias
PCCQ		320	0	1.0	-6.4	6	5	6	4	Bias
PCCW		68	0	2.9	-4.3	1	1	0	1	Bias

Continued →

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
PCEX	152	0	1.7	3.1	0	0	1	1	Bias from October
PGWB	172	0	1.6	-4.2	2	2	3	2	Bias
UACU	151	5	1.9	3.0	0	0	0	0	Bias at end of period
UAIS	209	1	3.0	-8.5	4	4	4	2	Bias
UAJS	130	3	1.9	-4.7	2	2	1	1	Bias
UAMS	126	23	1.6	0.1	1	1	1	1	Gross Errors from October
UCAD	87	0	2.3	-5.4	3	2	1	2	Bias
UCDM	67	11	4.5	-1.1	0	0	0	1	Gross Errors from November
UCJB *	45	2	1.8	-5.9	1	1	1	0	Bias
UCJI *	50	0	2.7	-3.9	0	0	0	0	Bias
UCJL *	61	1	1.4	6.6	1	1	1	1	Bias
UCKC	96	5	2.2	-3.2	0	0	0	0	Bias from September
UDVB	82	7	3.1	-5.4	1	1	2	0	Bias
UFNO	117	0	3.1	4.6	1	1	1	1	Bias
UHLE	76	1	2.6	-7.3	1	4	4	3	Bias
UICO *	73	12	4.8	-1.5	1	1	2	1	Standard Deviation from October
UIKI *	231	0	1.5	2.5	0	0	0	0	Bias from December
V7BA6	89	1	1.2	12.1	1	0	5	0	Bias
V7BB2	90	90	---	---	3	0	0	2	Gross Errors
VCJM *	71	68	0.3	2.2	0	0	1	0	Gross Errors
VCRQ	151	150	0.0	-14.4	3	1	0	2	Gross Errors
VCTM	86	2	3.9	1.5	0	0	0	0	Standard Deviation at end of period
VCTV	139	4	2.9	3.6	1	0	0	0	Bias
VDLC	60	6	4.5	-4.7	1	0	0	1	Bias from November
VDRC	58	15	3.3	-4.0	1	0	0	1	Bias & Gross Errors
VGFQ	53	30	4.0	-0.7	1	1	0	1	Gross Errors
VGJC	60	33	4.5	-9.7	1	0	0	0	Gross Errors
VRUL7	69	1	2.0	3.5	1	2	1	0	Bias
VYNG *	208	202	3.2	11.0	6	1	0	5	Gross Errors
WC5932	70	1	3.9	-2.1	0	0	0	0	Bias at end of period
WDZB *	210	0	1.0	-5.5	6	6	6	4	Bias
ZCAM9 *	307	24	2.5	10.5	6	6	6	5	Bias
ZSDN *	108	0	3.6	4.7	1	1	1	1	Bias

TABLE 4: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 3 BUT LISTED AS SUSPECT OVER THE PERIOD JANUARY TO JUNE 1999.

Column 1 Call sign or identifier.
Column 2 Number of pressure observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of pressure observations differing by more than 15 hPa from background (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Column 6 Comments on quality of pressure observations.

Notes: 1. Units are hPa.

Identifier	N Obs.	NGE	SD	Bias	Comments
AGRF	56	0	2.0	2.3	Bias reduced
C6CU6	38				Less than 40 reports
C6PZ3	104	0	5.2	0.9	Bias reduced from September
DHGE	7				Less than 40 reports
DPBP	66	0	2.0	-3.2	Bias reduced
ELGZ5	11				Less than 40 reports
ELRM4	49	6	4.7	-2.2	Standard Deviation reduced
FHZI	26				Less than 40 reports
LATI4	299	0	2.0	-2.3	Bias reduced
LAXP4	166	0	1.5	-2.1	Bias reduced
OXKT2	107	0	1.6	-0.9	Bias reduced
PCBU	101	0	5.1	2.3	Bias reduced from October
PCCZ	151	0	4.4	2.0	Bias reduced from August
PEXX	17				Less than 40 reports
PJKP	132	0	1.0	0.2	Bias reduced
S6JP	12				Less than 40 reports
TEST1	4				Less than 40 reports
UAMQ	128	0	1.4	-2.4	Bias reduced
UBCB	80	0	1.5	0.6	Bias reduced
UCAC	32				Less than 40 reports
UCTQ	98	3	3.4	-2.7	Bias reduced from September
UCUD	85	5	3.1	-3.0	Standard Deviation reduced
UCUF	82	7	2.3	-2.7	Bias reduced
UCUP	27				Less than 40 reports
UDUE	0				No reports

Continued →

Identifier	N Obs.	NGE	SD	Bias	Comments
UDYG	94	1	4.4	0.2	Bias reduced
UDYN	80	1	2.9	0.0	Bias reduced
UFJJ	371	6	4.5	-0.6	Bias reduced
UFJU	14				Less than 40 reports
UFYN	35				Less than 40 reports
UHVW	37				Less than 40 reports
VCTX	73	6	4.8	-0.6	Gross errors reduced
VVGG	70	1	3.9	3.6	Bias reduced from November
V2XO	249	1	2.4	-3.0	Bias reduced from November
V7BI3	38				Less than 40 reports
WAV4647	50	0	1.6	-0.6	Standard Deviation reduced
WDZG	199	0	1.8	0.3	Bias reduced
3ECI8	0				No reports
3FFG7	129	2	2.3	-3.4	Bias reduced from October
3FGQ3	88	0	3.8	2.4	Bias reduced from August
3FPB6	0				No reports
31497	0				No reports
62026	3611	1065	1.4	-0.3	Gross Errors reduced from September
62138	385	2	2.4	0.2	Bias reduced

TABLE 5: LIST OF MARINE OBSERVING PLATFORMS REPORTING SUSPECT WIND SPEED OBSERVATIONS OVER THE PERIOD JULY TO DECEMBER 1999.

Column 1 Call sign or identifier.
Column 2 Number of wind speed observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of wind observations with vector difference from background of more than 25ms $^{-1}$ (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Columns 6-9 Number of times observing platform has appeared on suspect lists. B=Bracknell, E=ECMWF, T=Tokyo, W=Washington.
Column 10 Comments on quality of wind speed observations.

Notes: 1. Units are ms^{-1}.
2. Observing platforms marked with an asterisk were listed in the previous report (January to June 1999)

Table 5a: Platforms reporting in BUOY code

*i): Platforms **non-operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
41524	836	0	6.8	6.6	3	3	1	1	Standard Deviation & Bias
41629	880	0	5.6	1.3	0	1	0	1	St'd Deviation & Bias from Nov.
41644	394	0	6.7	0.6	0	1	0	2	Standard Deviation
41655	191	0	7.5	3.3	0	0	0	0	St'd Deviation & Bias from Aug.
52643	472	0	6.3	4.1	1	1	0	1	Standard Deviation

*ii): Platforms **operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
21612	1095	0	3.0	-2.3	2	2	1	2	Bias from November
41651	432	0	3.2	1.8	1	1	0	0	Bias at end of period

Table 5b: Platforms reporting in SHIP code

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
3FSL4	251	0	3.6	5.0	2	2	3	2	Bias
3FTW	160	0	4.6	6.5	2	2	2	1	Bias
3FWM4	414	0	3.7	5.3	4	1	4	1	Bias
9HII6	127	0	5.3	8.5	3	3	3	2	Bias
9VMY *	92	0	5.8	7.3	1	0	4	1	Bias
C6JE5	174	0	2.8	-5.5	2	2	1	1	Bias
C6JS	195	0	4.1	2.1	1	1	1	1	St'd Deviation & Bias from Dec.
C6NI3	149	0	5.2	7.0	5	5	0	2	Bias
DDPH	179	0	3.8	3.6	0	0	0	0	Bias from September
DEHZ	302	0	4.3	3.5	1	1	1	0	St'd Deviation & Bias from Dec.
DGCDFD	379	0	4.8	3.7	2	2	2	2	Bias from November
ELGG3	160	0	4.9	3.1	1	1	1	0	St'd Deviation & Bias from Nov.
ELTZ2	206	0	4.6	6.1	5	4	3	2	Bias
ELVK2	90	0	6.0	10.8	2	2	1	2	Bias
ELWC6 *	212	0	6.3	10.6	5	5	3	4	Standard Deviation & Bias
ELXK6	79	0	5.8	9.8	1	0	0	1	Bias
J8GK8	443	0	5.3	3.0	2	2	2	2	Bias from November
LAQQ2	90	0	4.1	4.4	0	0	0	0	Bias from November
LAQT2	182	0	3.3	3.3	1	1	1	1	Bias from December
PJVQ	195	0	4.9	4.3	2	1	1	1	Bias at end of period
SHIPAB	64	0	6.2	2.8	0	0	0	0	Standard Deviation
SXYY	200	0	5.3	3.9	2	2	0	0	Bias from December
TSMS	472	0	3.6	3.9	0	2	1	0	Bias at end of period
TSMU	394	0	4.1	4.4	0	1	0	0	Bias from December
UCTP	209	0	4.1	5.4	3	3	3	3	Bias
V2TE *	168	0	6.3	7.6	3	4	3	2	Standard Deviation & Bias
VCTJ	147	0	2.9	4.1	0	2	1	0	Bias at end of period
ZCAX8	119	0	6.1	3.9	1	0	0	0	Standard Deviation

TABLE 6: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 5 BUT LISTED AS SUSPECT OVER THE PERIOD JANUARY TO JUNE 1999.

Column 1 Call sign or identifier.
Column 2 Number of wind speed observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of wind observations with vector difference from background of more than 25ms^{-1} (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Column 6 Comments on quality of wind speed observations.

Notes: 1. Units are ms^{-1}.

Identifier	N Obs.	NGE	SD	Bias	Comments
C6IF	0				No reports
C6LQ3	82	1	4.1	2.1	Standard Deviation & Bias reduced
C6PT3	28				Less than 40 reports
DGSE	180	0	2.9	1.9	Bias reduced
DUQM	198	3	5.6	1.9	Bias reduced from September
DUXW	22				Less than 40 reports
ELVG7	1				Less than 40 reports
EQUV	28				Less than 40 reports
GDUC	0				No reports
LOWO2	0				No reports
MWBJ9	350	1	4.7	2.2	Bias reduced
MXHR6	134	0	6.0	3.6	Bias reduced from September
MXSD6	187	2	5.1	3.8	Standard Deviation reduced
P3KZ7	0				No reports
P3XH7	12				Less than 40 reports
PGDC	148	0	3.3	0.3	Standard Deviation & Bias reduced
PGGQ	102	0	2.8	1.0	Standard Deviation reduced
PJAG	295	0	3.8	2.1	Standard Deviation & Bias reduced
PJOX	176	0	4.3	0.2	Standard Deviation reduced
SKFQ	0				No reports

Continued →

Identifier	N Obs.	NGE	SD	Bias	Comments
SYMK	241	1	2.1	4.0	Bias reduced
UCUD	84	0	2.6	1.6	Standard Deviation reduced
UCUF	84	1	3.5	1.1	Standard Deviation reduced
ULYS	49	0	3.0	4.6	Bias reduced
VRUZ7	31				Less than 40 reports
VRVD6	173	0	5.3	3.3	Bias reduced from September
ZCAX9	175	0	2.6	0.5	Standard Deviation reduced
62202	100	0	2.9	1.8	Standard Deviation reduced
9MBQ4	111	0	3.8	4.4	Bias reduced
9VWH	135	33	7.2	4.6	Gross Errors & Standard Deviation reduced

TABLE 7: LIST OF MARINE OBSERVING PLATFORMS PRODUCING SUSPECT WIND DIRECTION OBSERVATIONS OVER THE PERIOD JULY TO DECEMBER 1999.

Column 1 Call sign or identifier.
Column 2 Number of wind direction observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of wind observations with vector difference from background of more than 25ms^{-1} (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Columns 6-9 Number of times observing platform has appeared on suspect lists. B=Bracknell, E=ECMWF, T=Tokyo, W=Washington.
Column 10 Comments on quality of wind direction observations.

Notes:
1. Units are degrees (°).
2. Observing platforms marked § had a significant bias at some time within the period and the statistics and their plots refer to direction reports associated with background wind speeds greater than 5 ms^{-1}. If no significant speed bias was present, the statistics and plots refer to direction reports with an observed speed greater than 5 ms^{-1}.
3. Observing platforms marked with an asterisk were listed in the previous report (January to June 1999)

Table 7a: Platforms reporting in BUOY code

*i): Platforms **non-operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
41638	658	0	3.2.	52.9	2	2	1	1	Bias
52624	262	0	16.2	40.4	1	2	1	0	Bias
55587	2742	0	44.0	41.1	4	4	4	4	Bias

*ii): Platforms **operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
56505	207	0	34.2	-32.2	1	1	1	1	Bias

Table 7b: Platforms reporting in SHIP code

Identifier	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
3FSL4 §	247	0	60.2	-13.1	1	1	1	1	Standard Deviation
46012	108	0	52.3	-29.9	1	1	0	1	Bias at and of period
MRSG8	104	0	66.2	14.4	0	0	1	0	Standard Deviation
UCTJ	96	0	67.0	11.3	0	0	0	0	Standard Deviation
UFJJ	267	0	63.1	-4.5	0	3	1	2	Standard Deviation

TABLE 8: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 7 BUT LISTED AS SUSPECT OVER THE PERIOD JANUARY TO JUNE 1999.

Column 1 Call sign or identifier.
Column 2 Number of wind direction observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3 Number of wind observations with vector difference from background of more than 25ms $^{-1}$ (gross error).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
Column 6 Comments on quality of wind direction observations.

Notes: 1. Units are degrees (°).

Identifier	N Obs.	NGE	SD	Bias	Comments
ELVH	31				Less than 40 reports
KHLN	50	0	83.2	-11.1	Standard Deviation reduced
PFDI	55	0	54.5	3.5	Less erratic
SMLQ	7				Less than 40 reports
UBCB	85	0	17.1	-12.8	Bias reduced
9VWH	129	0	74.0	-18.6	Less erratic

TABLE 9: LIST OF MARINE OBSERVING PLATFORMS REPORTING SUSPECT SEA SURFACE TEMPERATURE OBSERVATIONS OVER THE PERIOD JULY TO DECEMBER 1999.

Column 1 Call sign or identifier
Column 2 Number of sea-surface temperature observations available for monitoring during June 1999 (or May and June if suspect only by considering the two month period), including any observations with gross errors.
Column 3 Number of sea surface temperature observations differing by more than 15 °C from the NCEP background field (gross errors).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences excluding cases of gross error.
Column 6 Comments on quality of sea surface temperature observations.

Notes: 1. Units are °C.
2. Observing platforms marked with an asterisk were listed in the previous report (January to June 1999)

Table 9a: Platforms reporting in BUOY code

*i): Platforms **non-operational** at the end of the reporting period*

The information available from NCEP did not allow statistics to be assessed for platforms in this category.

*ii): Platforms **operational** at the end of the reporting period*

Identifier	N Obs.	NGE	SD	Bias	Comments
15537	89	0	0.5	4.4	Bias
15538 *	81	0	0.3	4.8	Bias
17903	69	0	0.2	-12.2	Bias
21618	178	0	2.1	4.2	Bias
21623	142	0	2.4	5.4	Bias
32821	57	38	4.6	-0.9	Gross Errors
44613	225	218	4.1	-1.6	Gross Errors
46547	145	0	1.7	4.5	Bias
46568	172	0	2.2	4.9	Bias
61521	110	0	2.7	4.9	Bias
61539	84	11	2.3	-11.3	Bias
61540	309	0	1.7	4.2	Bias
61541	337	0	2.9	7.3	Bias
61542	164	0	2.2	7.4	Bias
61544	327	0	1.1	4.6	Bias

Continued →

Identifier	N Obs.	NGE	SD	Bias	Comments
61545	311	4	2.1	7.6	Bias
61546	334	4	2.8	8.2	Bias
61547	331	0	2.9	6.9	Bias
61548	327	0	2.7	6.3	Bias
61549	326	0	2	6.9	Bias
61564	298	0	2.9	4.1	Bias
61565	185	0	3.7	7.9	Bias
61598	120	5	3.1	6.5	Bias
61612	147	6	3.8	-7.6	Bias
61629	321	0	2.3	4.3	Bias
62519	202	199	5.8	-6.3	Bias

Table 9b: Platforms reporting in SHIP code

Identifier	N Obs.	NGE	SD	Bias	Comments
ABAN6	729	61	4.8	6.8	Bias
CGBY	43	4	3.6	4.7	Bias
CGDS	77	2	4.6	6.4	Bias
CTHI	41	21	4.1	-11.8	Gross Errors & Bias
CYBJ	47	1	3.7	4.7	Bias
CYLX	47	2	4.4	5.2	Bias
C6OQ8	49	0	2	4.5	Bias
DBBX	88	0	3.7	5.5	Bias
ELOW4	45	0	4	5.7	Bias
KLKZ *	51	2	1.6	5.5	Bias
LF3N	176	0	3.7	-6.8	Bias
LPOI1 *	638	60	2.9	7.2	Bias
MSTM6	44	1	2.2	4.5	Bias
PFUA	46	2	2.8	-6.1	Bias
SUPN6	728	78	5.1	7.1	Bias
TPLM2	730	17	6.2	3.5	Standard Deviation
UIAG	54	0	2	4.5	Bias
VCTM	50	0	3.3	4.8	Bias
VGNW	79	2	3.4	6.2	Bias
WBS4	92	10	4.2	7	Bias
WE4805	94	0	3.3	4.6	Bias
WQZ9670	114	1	3.3	4.6	Bias
YJZC5	64	0	1.5	-4.8	Bias
3FDZ5	62	0	2.4	6.5	Bias
3FFR6	51	5	2.3	-4.2	Bias
44011	724	0	0.8	-5.1	Bias
44014	716	0	1.6	-5	Bias
45135	721	80	5.3	7.4	Bias
46060	1440	0	1.6	5.1	Bias
46131 *	727	90	2.6	8.1	Bias
46146	727	96	2.5	7.3	Bias
46181	730	48	3.3	5.6	Bias

TABLE 10: PLATFORMS LISTED AS SUSPECT, BY NCEP, IN DECEMBER 1999 FOR WHICH THERE IS INSUFFICIENT INFORMATION TO JUDGE OBSERVATION QUALITY OVER A LONGER PERIOD.

Column 1 Call sign or identifier
Column 2 Number of sea-surface temperature observations available for monitoring during December 1999, including any observations with gross errors.
Column 3 Number of sea surface temperature observations differing by more than 15 °C from the NCEP background field (gross errors).
Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5 Mean of observation-minus-background differences excluding cases of gross error.
Column 6 Comments on quality of sea surface temperature observations.

Notes: 1. Units are °C.
2. Observing platforms marked with an asterisk were listed in the previous report (January to June 1999)

Table 10a: Platforms reporting in BUOY code

Identifier	N Obs.	NGE	SD	Bias	Comments
64903	22	20	0.4	14.3	Gross Errors
64906	30	28	0	14.2	Gross Errors
64909	25	20	0.7	14.3	Gross Errors

Table 10b: Platforms reporting in SHIP code

Identifier	N Obs.	NGE	SD	Bias	Comments
UCDP	21	1	6.6	-7	Bias
UDTH	29	2	3	4.5	Bias
VCLX	24	0	1.9	4.2	Bias
VCRJ	21	0	2.1	4.1	Bias
VOPM	29	1	2.5	4.9	Bias
VRVB9	34	0	2.3	7	Bias
WRB4141	30	0	3.9	5.8	Bias
WUR8857	20	1	2.6	5.4	Bias

Figure 1: Number of observations of pressure received at Bracknell on the GTS for each of the six-month periods covered by the WMO reports on the quality of marine surface observations

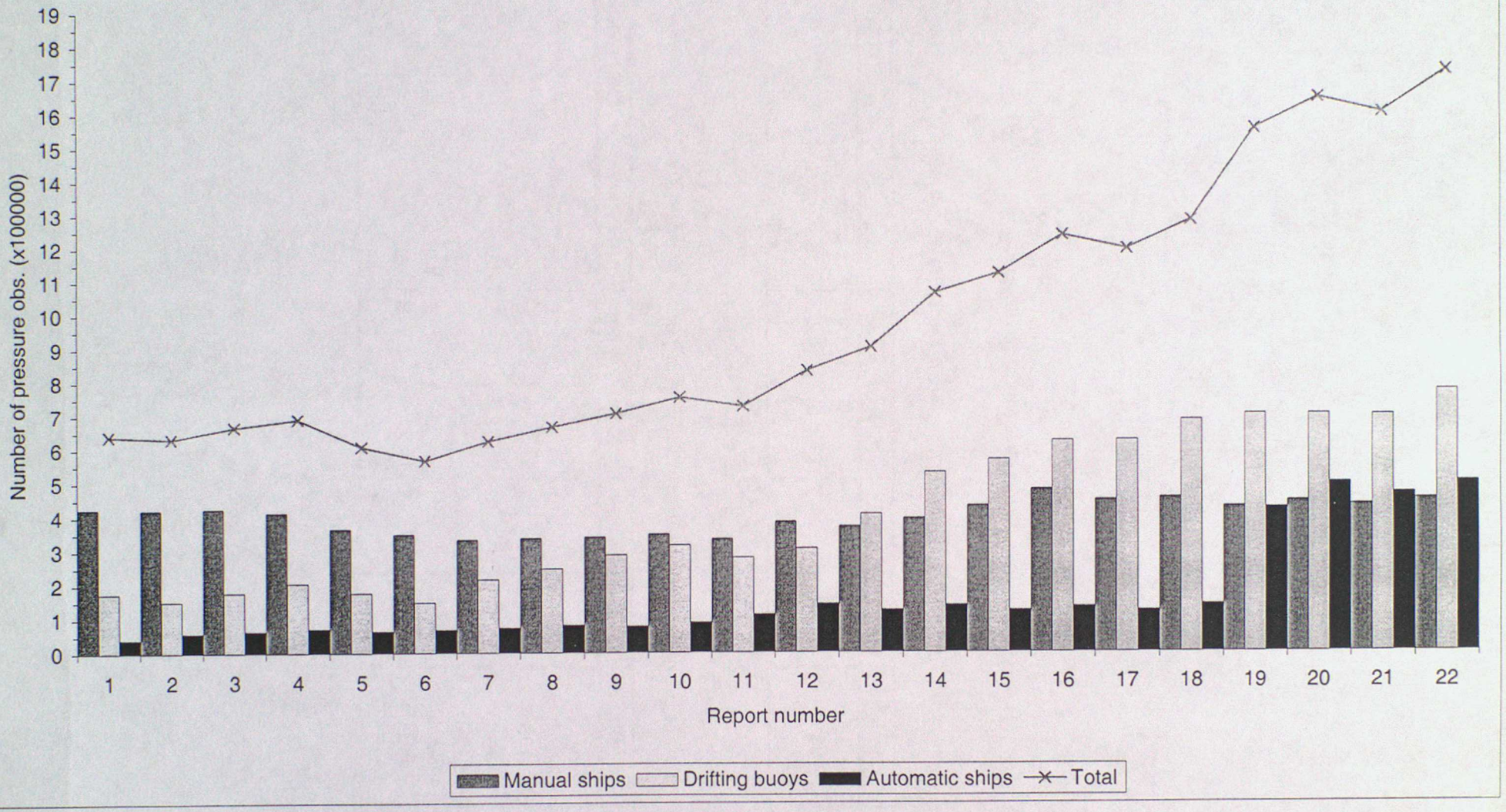
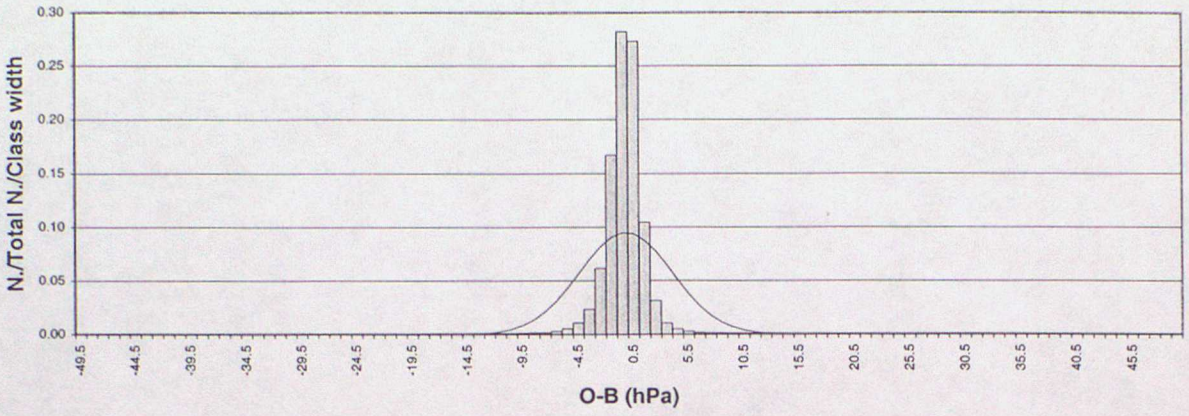
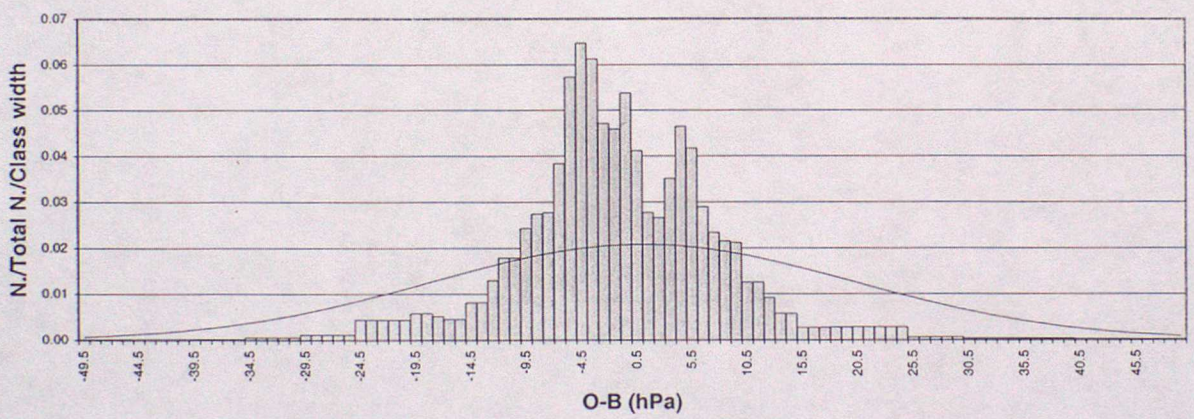


Figure 2a: Distribution of ship O-B pressure (hPa)
Period of data: July-Dec 1999 Data used: All observations



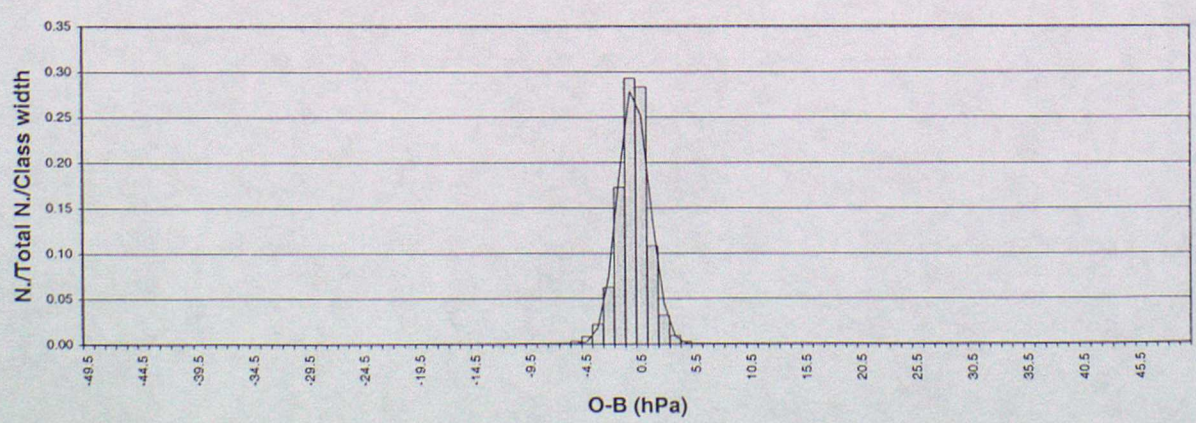
Mean O-B = -0.2 SD O-B = 4.2

Figure 2b: Distribution of ship O-B pressure (hPa)
Period of data: July-Dec 1999 Data used: Flagged observations



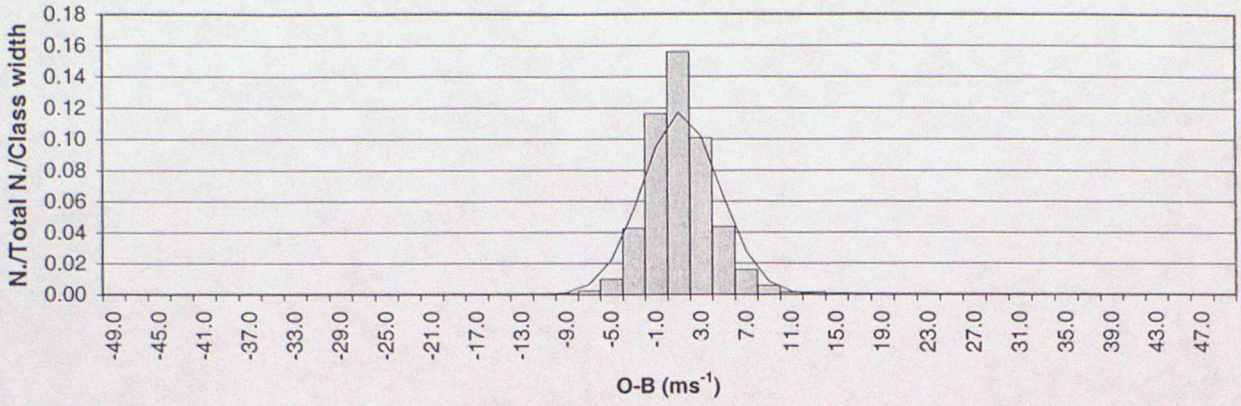
Mean O-B = 1 SD O-B = 19.2

Figure 2c: Distribution of ship O-B pressure (hPa)
Period of data: July-Dec 1999 Data used: Unflagged observations



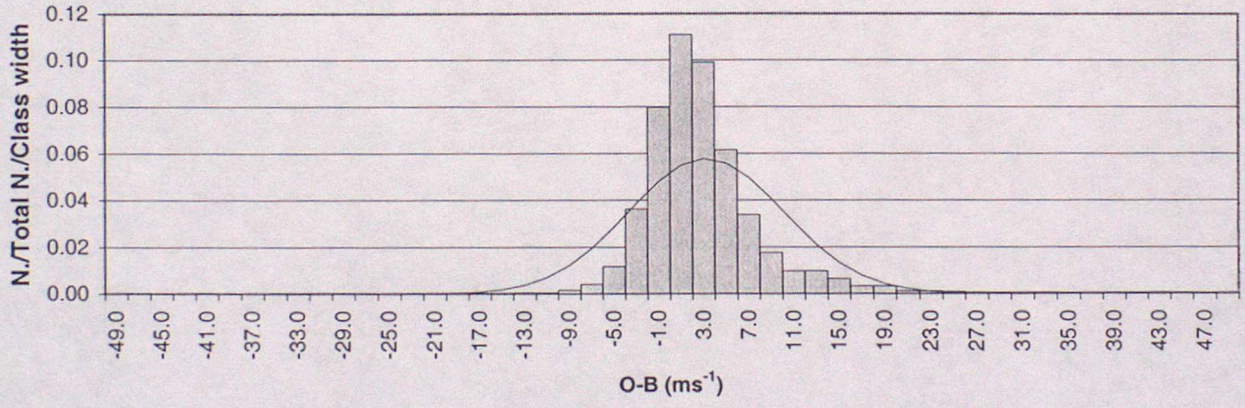
Mean O-B = -0.2 SD O-B = 1.4

Figure 2d: Distribution of ship O-B wind speed (ms^{-1})
Period of data: July-Dec 1999 Data used: All observations



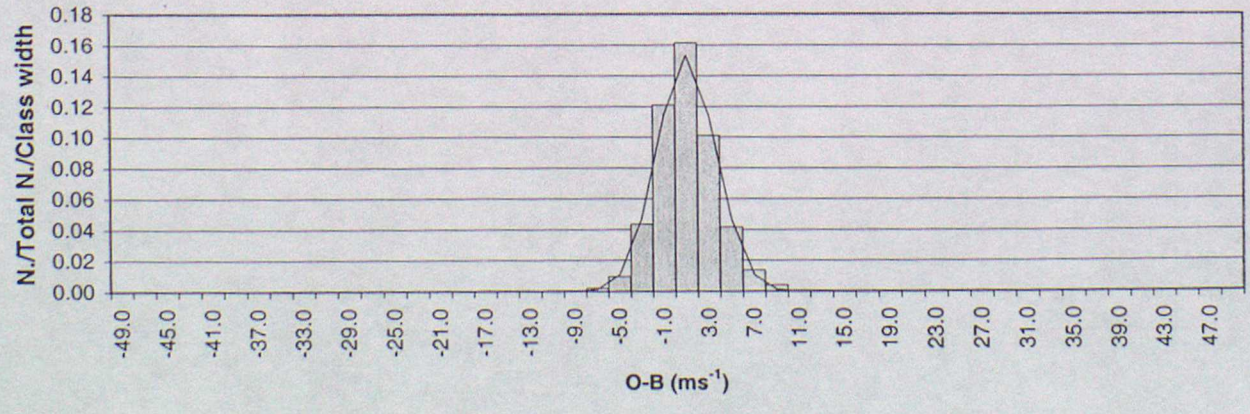
Mean O-B = 1.2 SD O-B = 3.4

Figure 2e: Distribution of ship O-B wind speed (ms^{-1})
Period of data: July-Dec 1999 Data used: Flagged observations



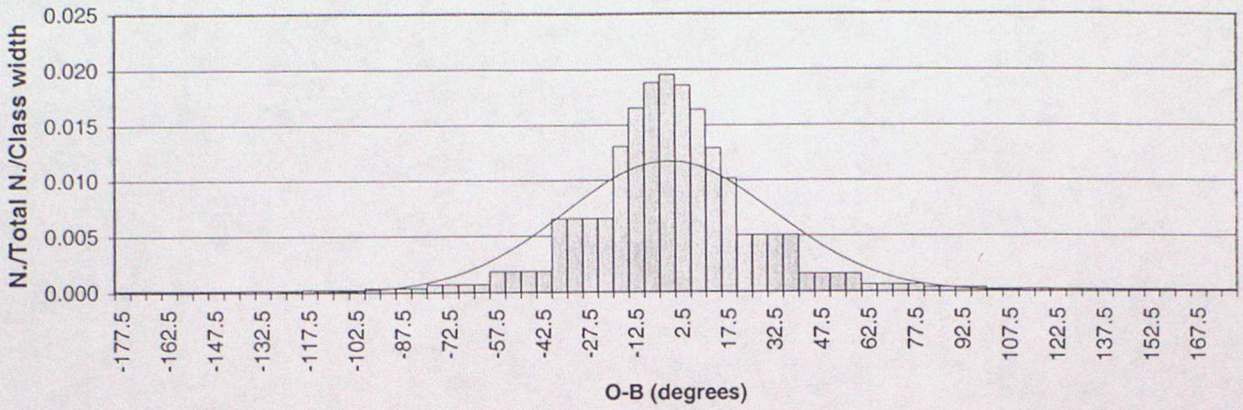
Mean O-B = 3.2 SD O-B = 6.9

Figure 2f: Distribution of ship O-B wind speed (ms^{-1})
Period of data: July-Dec 1999 Data used: Unflagged observations



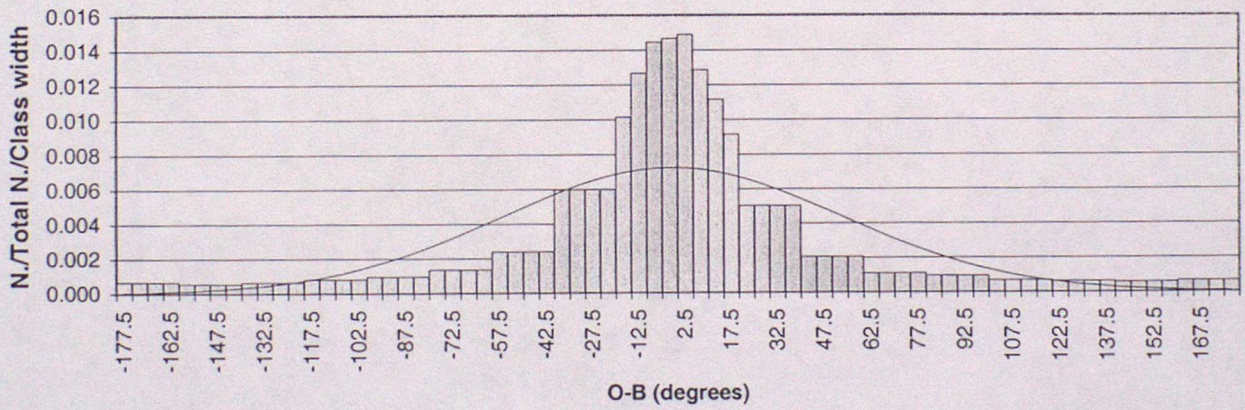
Mean O-B = 1.0 SD O-B = 2.6

Figure 2g: Distribution of ship O-B wind direction (degrees)
Period of data: July-Dec 1999 Data used: All observations



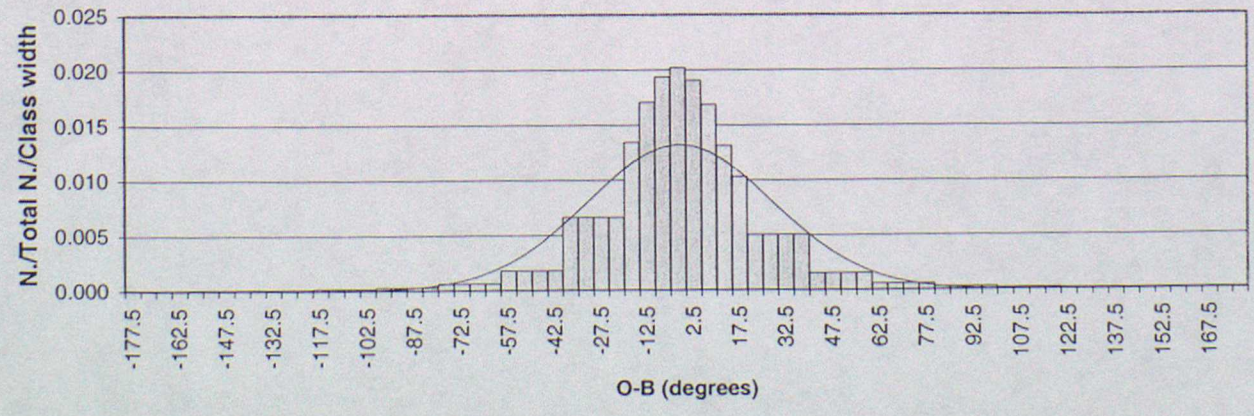
Mean O-B = -1.9 SD O-B = 34.0

Figure 2h: Distribution of ship O-B wind direction (degrees)
Period of data: July-Dec 1999 Data used: Flagged observations



Mean O-B = -2.0 SD O-B = 55.1

Figure 2i: Distribution of ship O-B wind direction (degrees)
Period of data: July-Dec 1999 Data used: Unflagged observations



Mean O-B = -1.9 SD O-B = 30.2

FIG 3: BIAS OF SHIP PRESSURE O-B. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE BIAS OF MAGNITUDE GREATER THAN 0.5 HPA

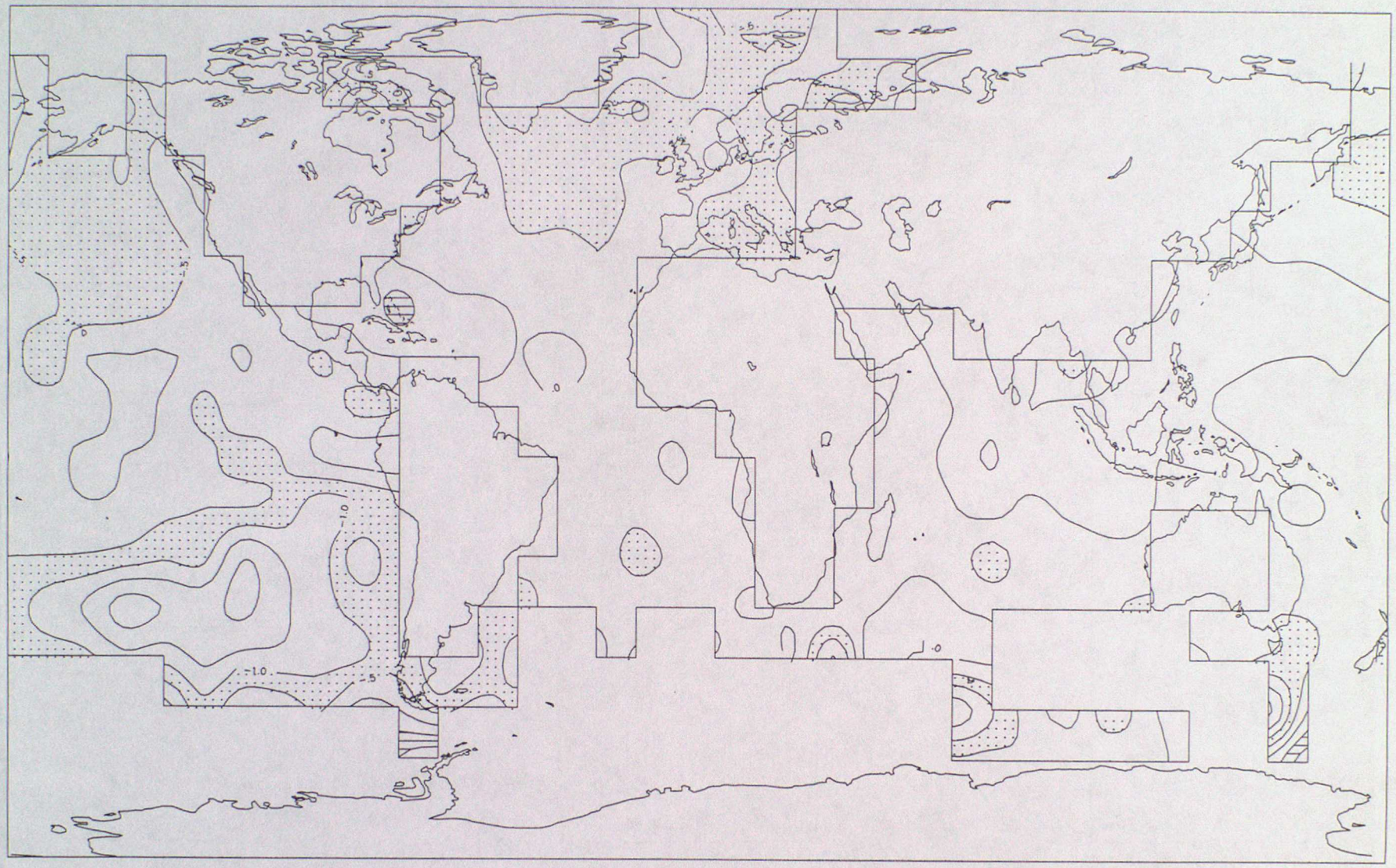


FIG 4: S.D. OF SHIP PRESSURE O-B. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 2.0HPA

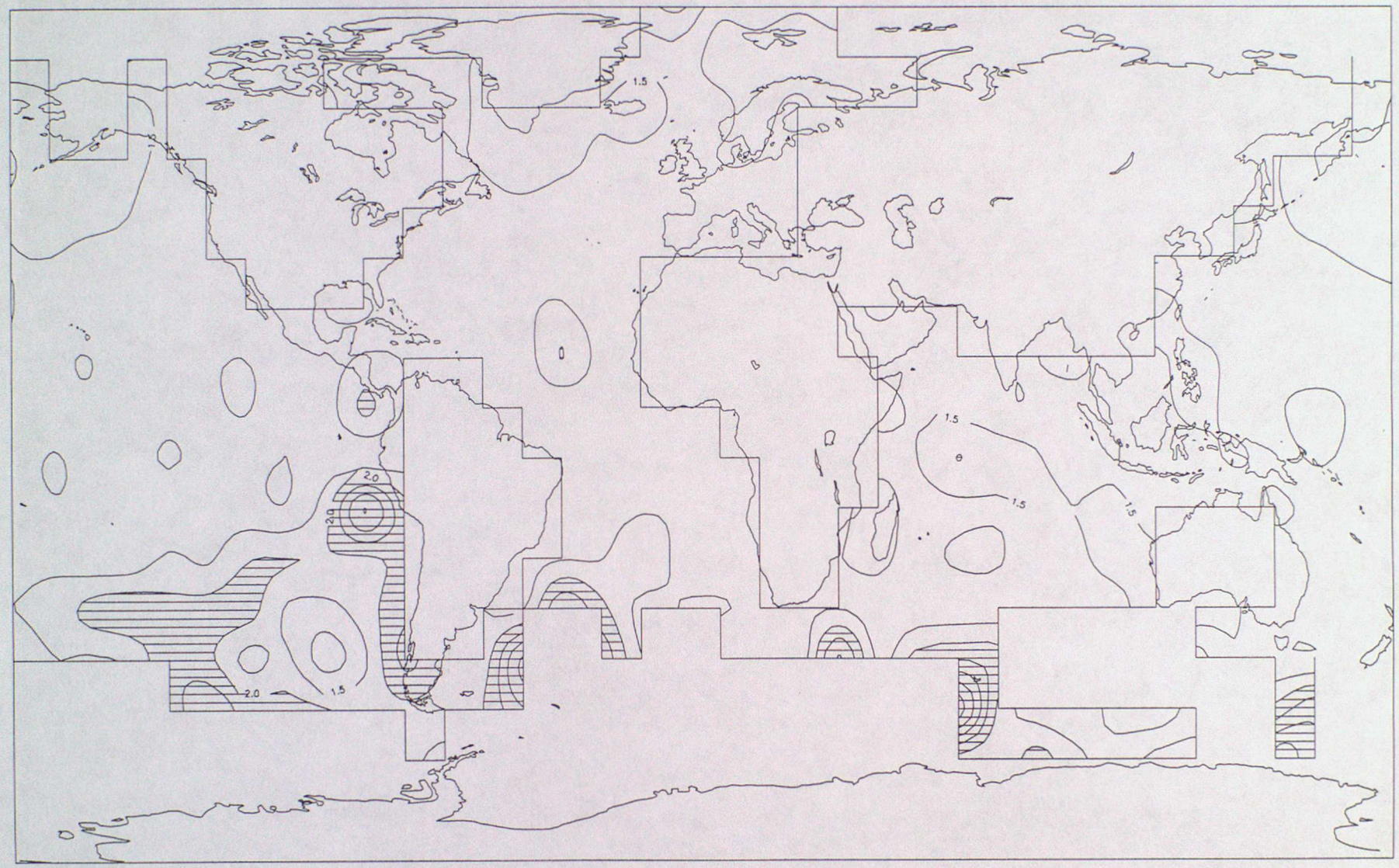


FIG 5:
PLOT OF NUMBER OF SHIP PRESSURE OBS. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL INCLUDED

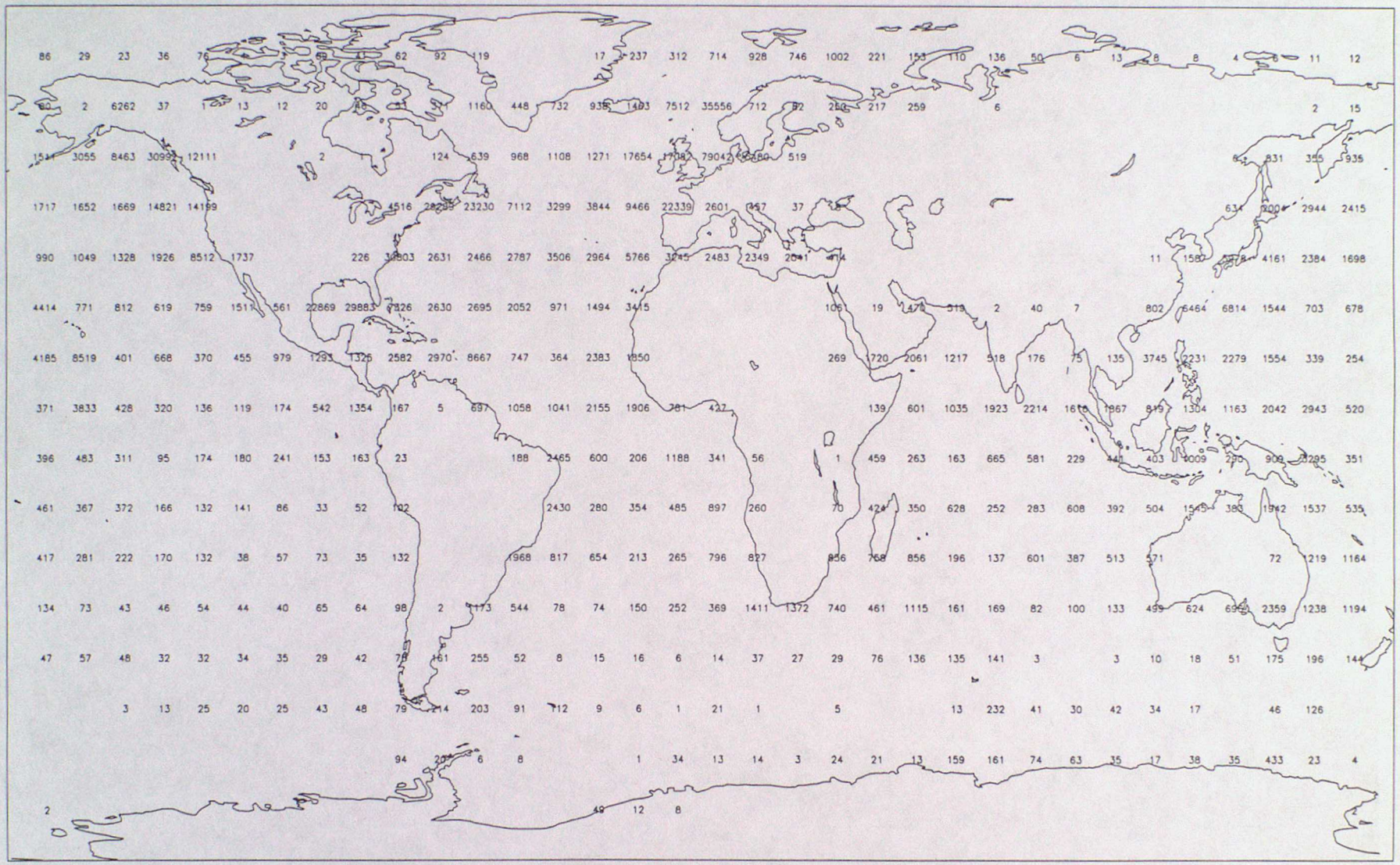


FIG 6: BIAS OF SHIP O-B WIND SPEED IN MS-1. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE BIAS OF MAGNITUDE GREATER THAN 2.0MS-1

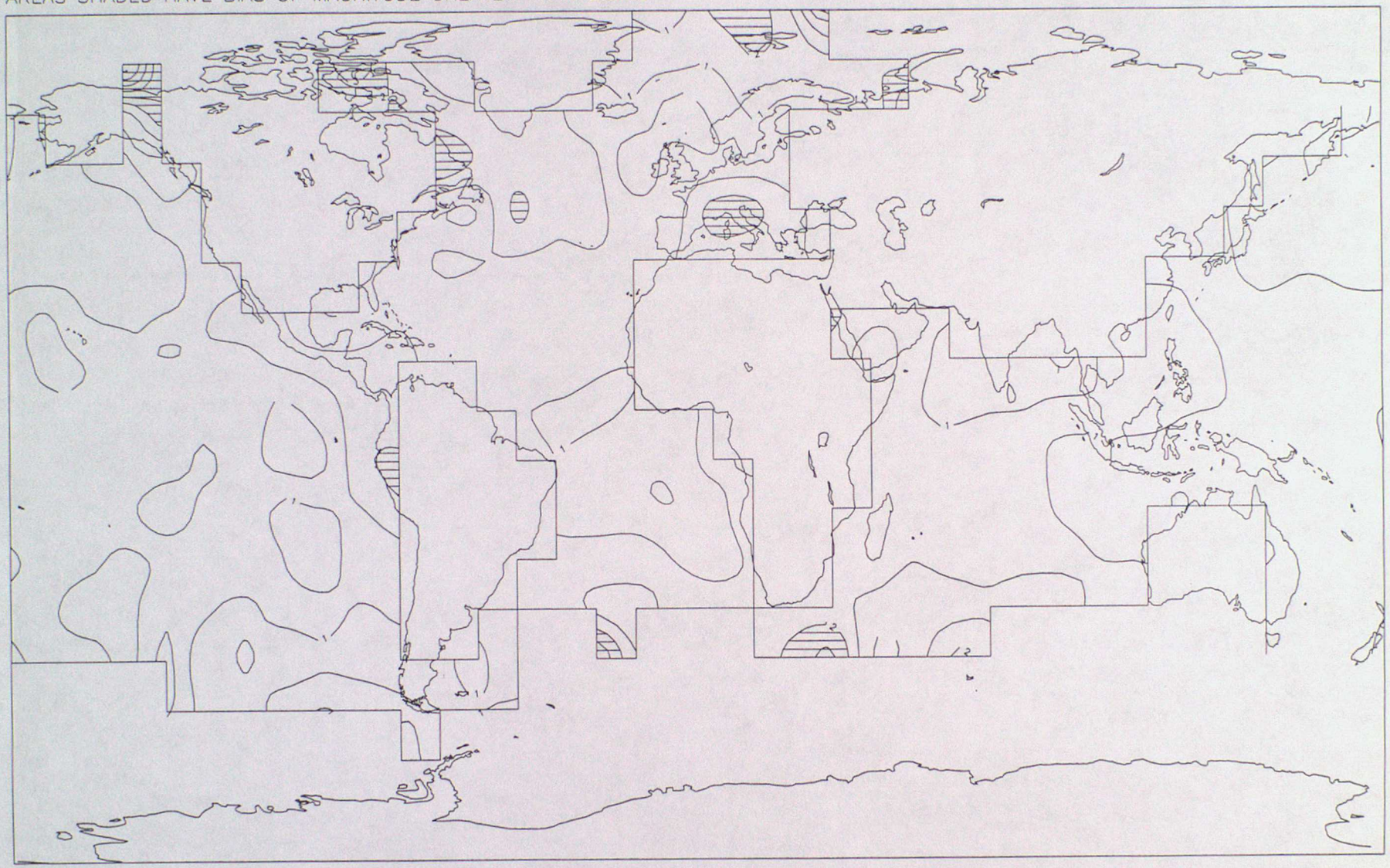


FIG 7: S.D. OF SHIP O-B WIND SPEED IN MS-1. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 4.0 MS-1

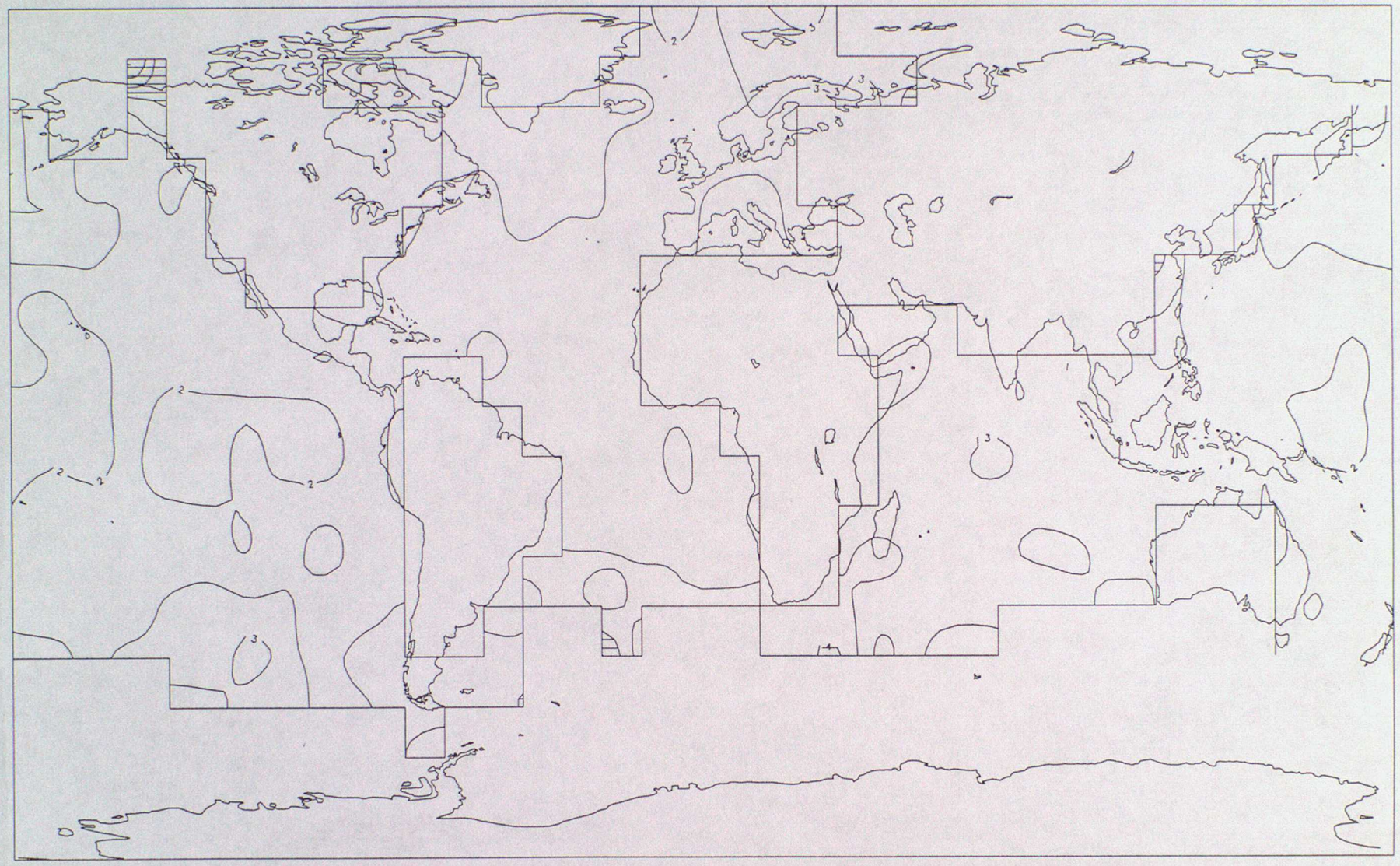


FIG 8:
PLOT OF NUMBER OF SHIP WIND SPEED OBS. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL INCLUDED

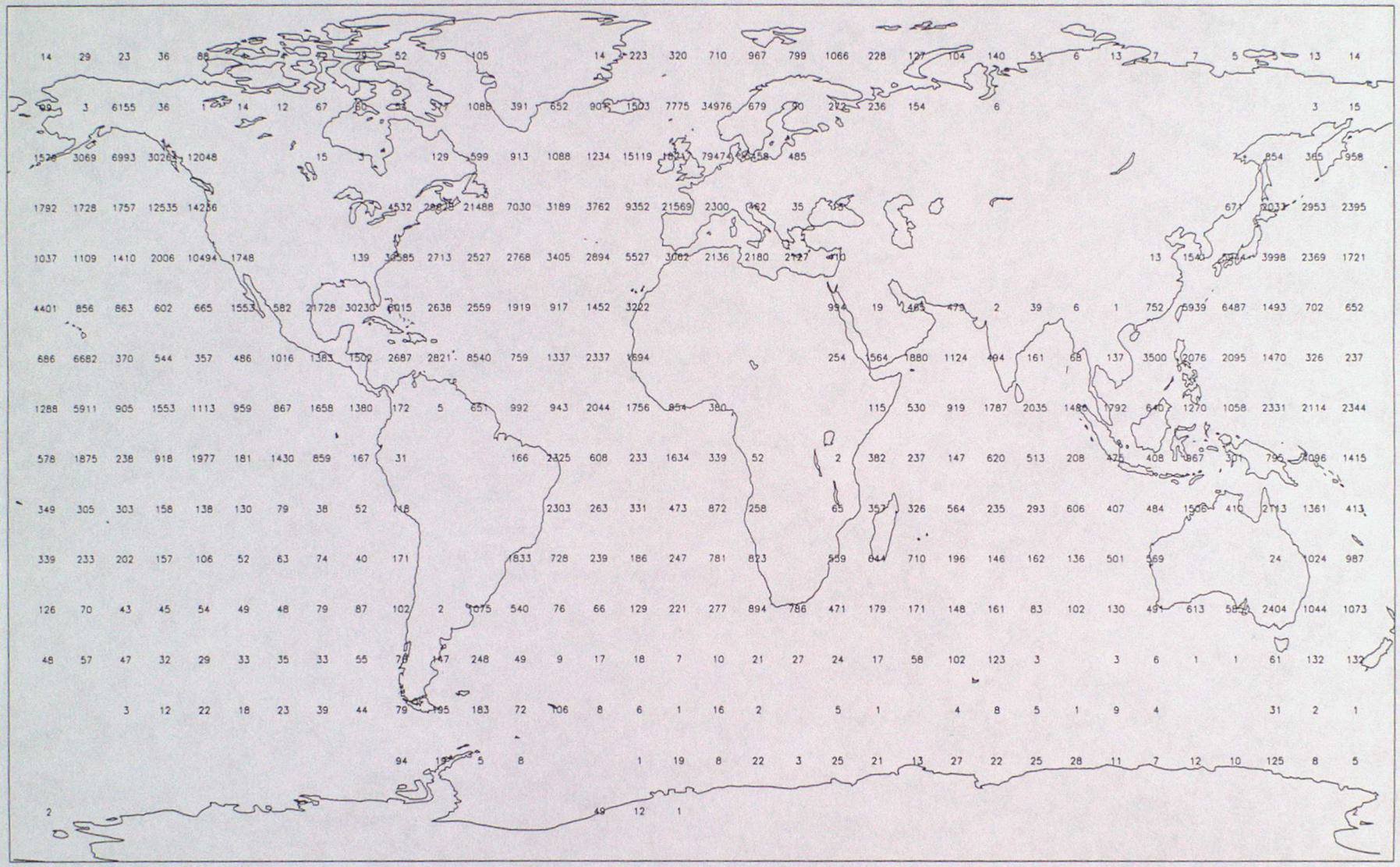


FIG 9: BIAS OF SHIP O-B WIND DIRECTION IN DEG. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE BIAS OF MAGNITUDE GREATER THAN 10 DEG

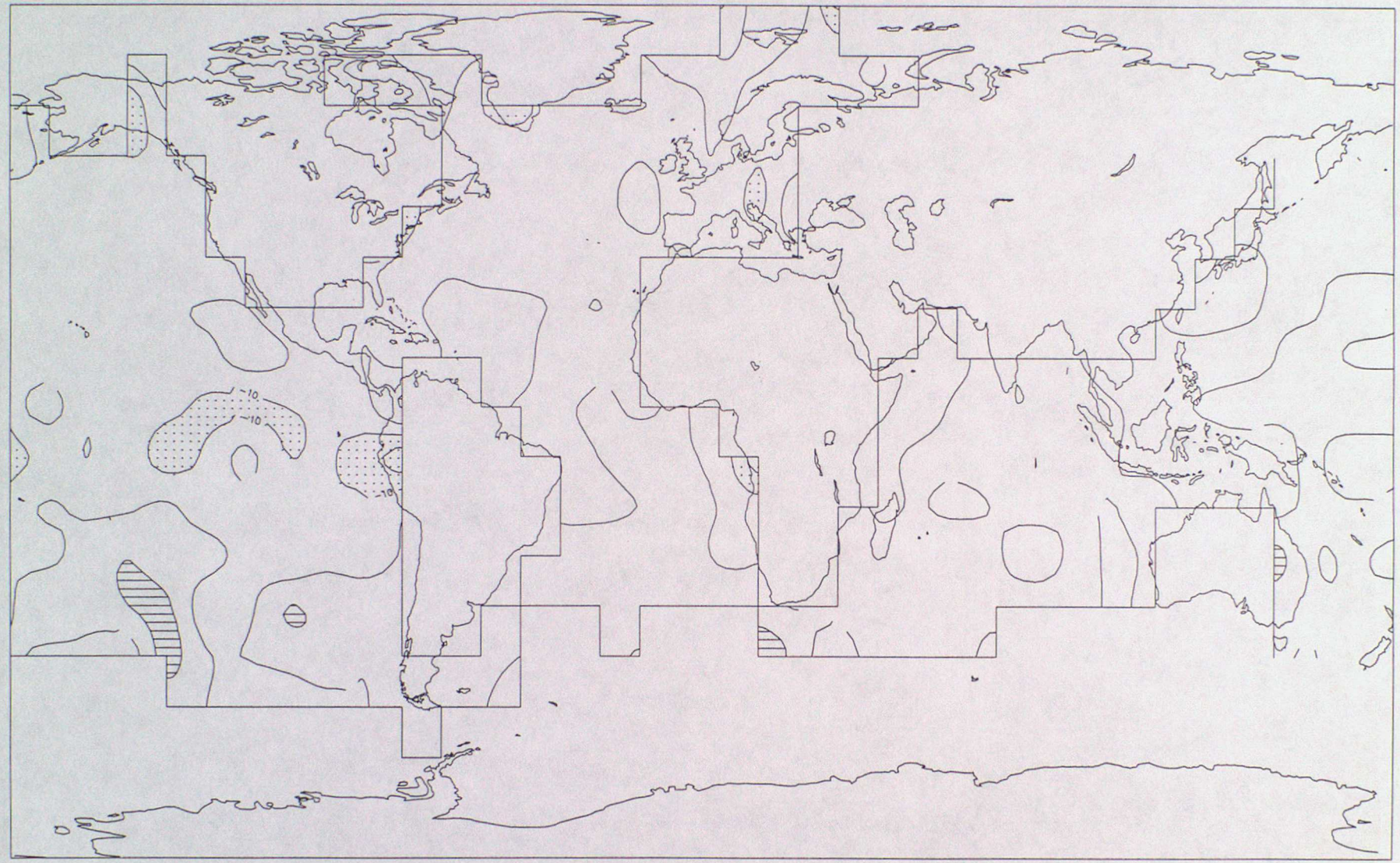


FIG 10: S.D. OF SHIP O−B WIND DIRECTION IN DEG. DATE:− JULY − DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 40 DEG

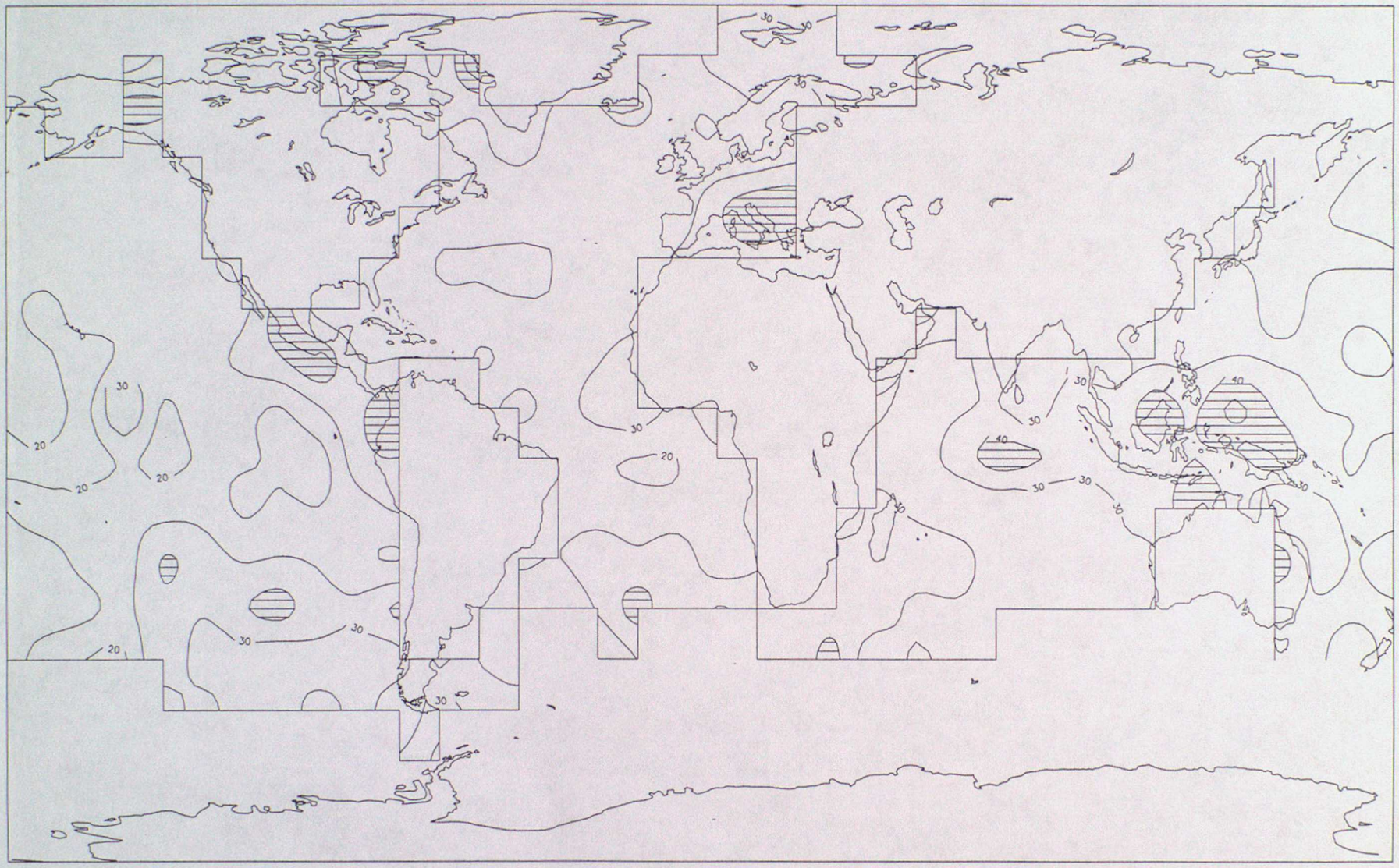
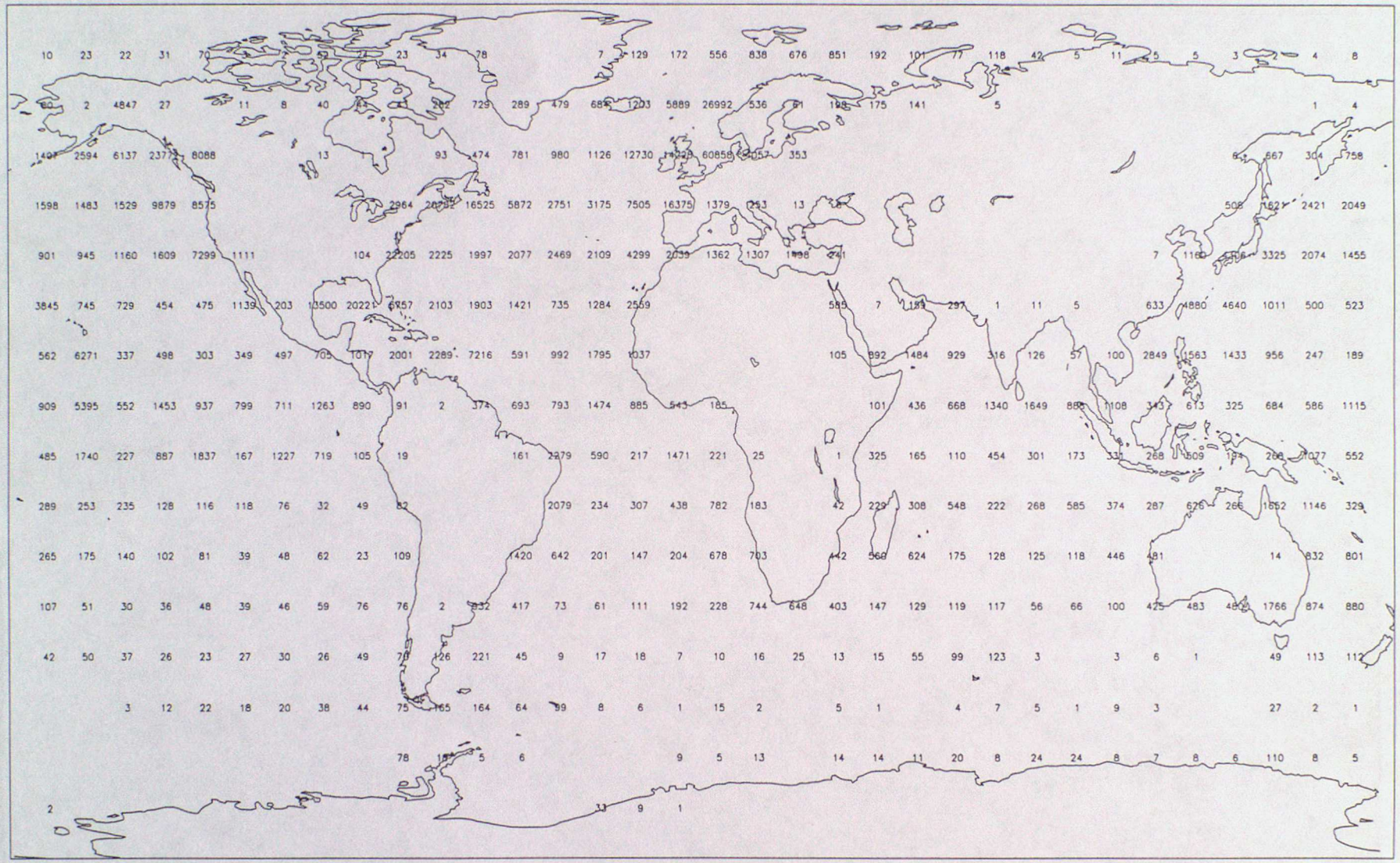
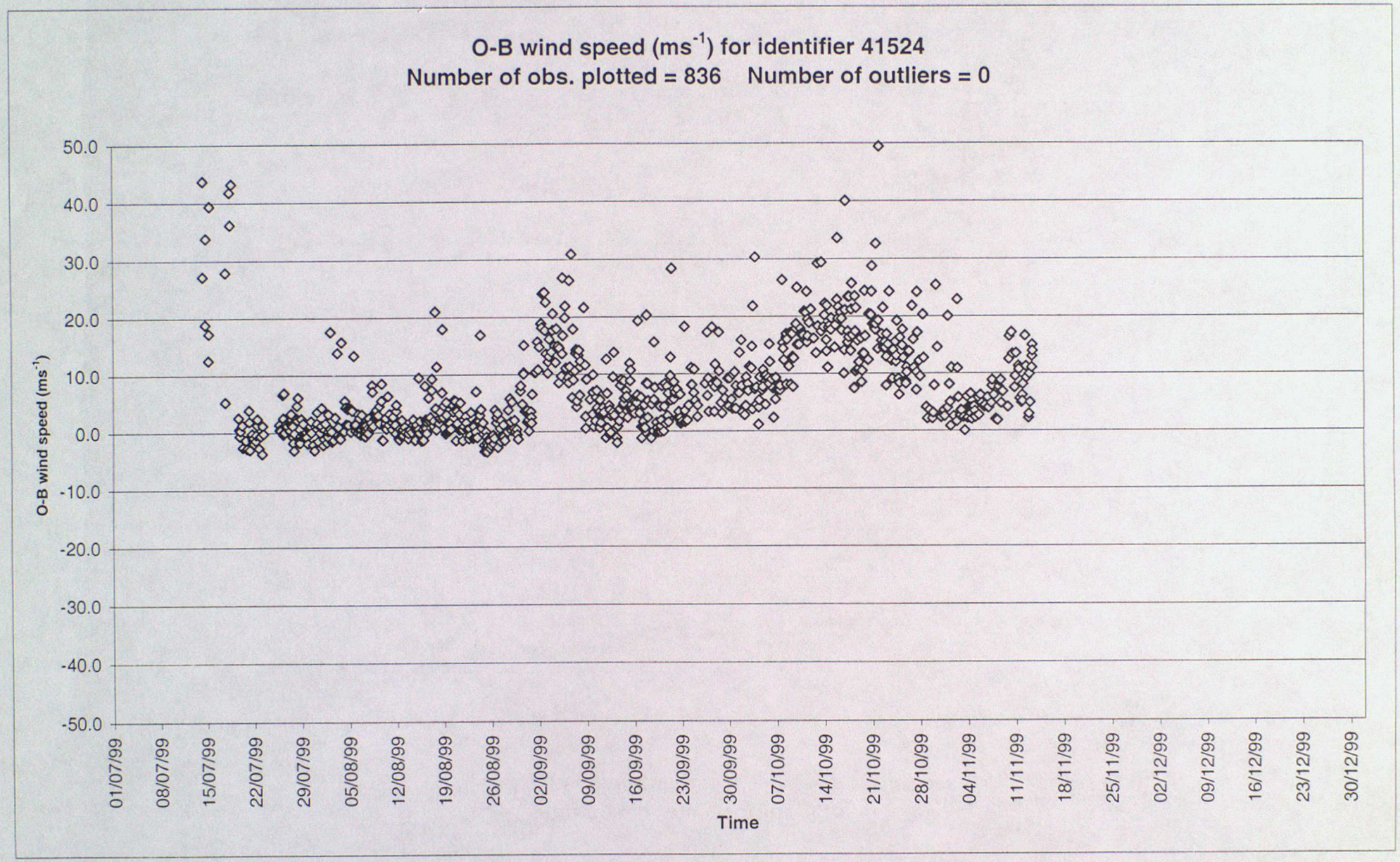
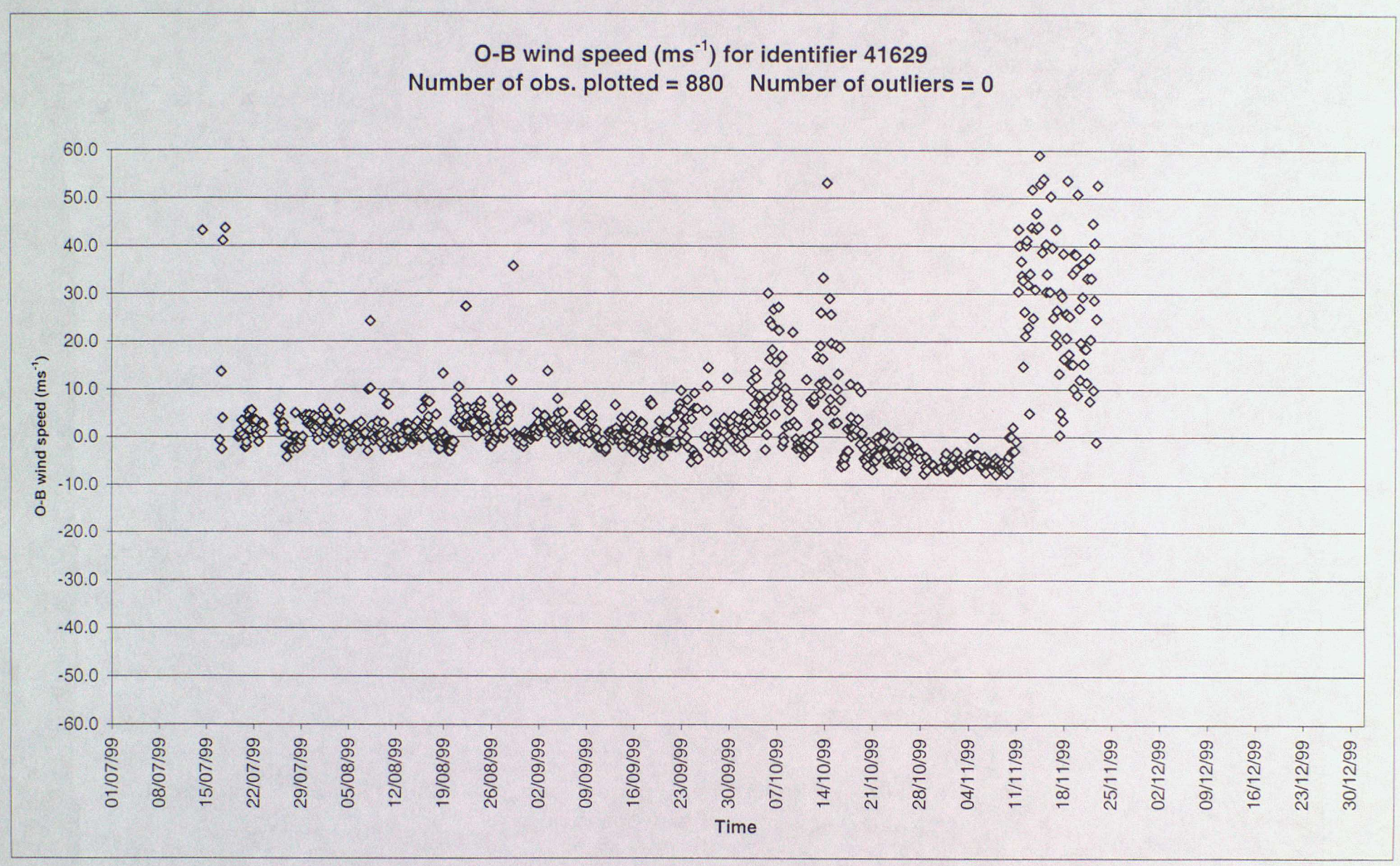
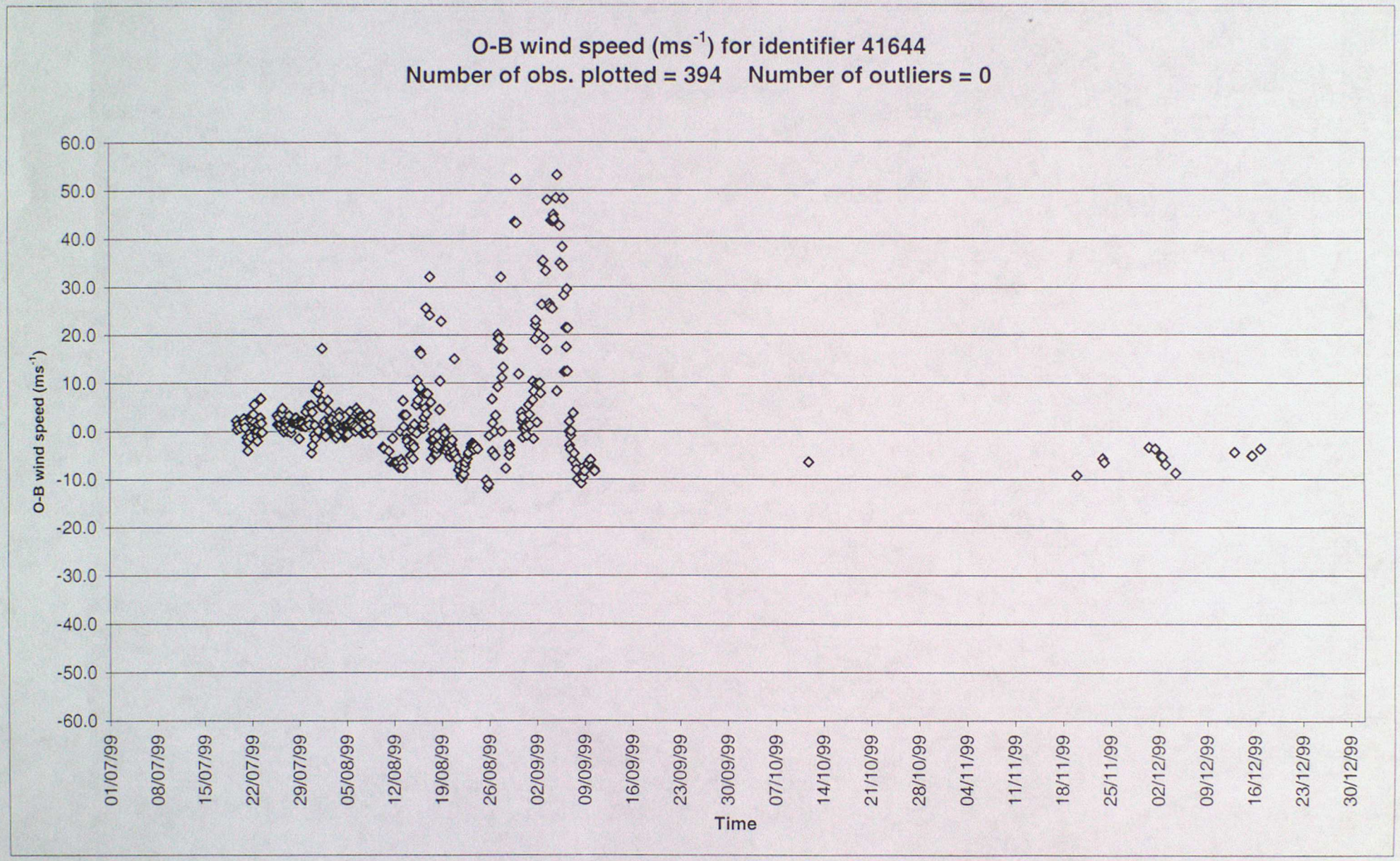


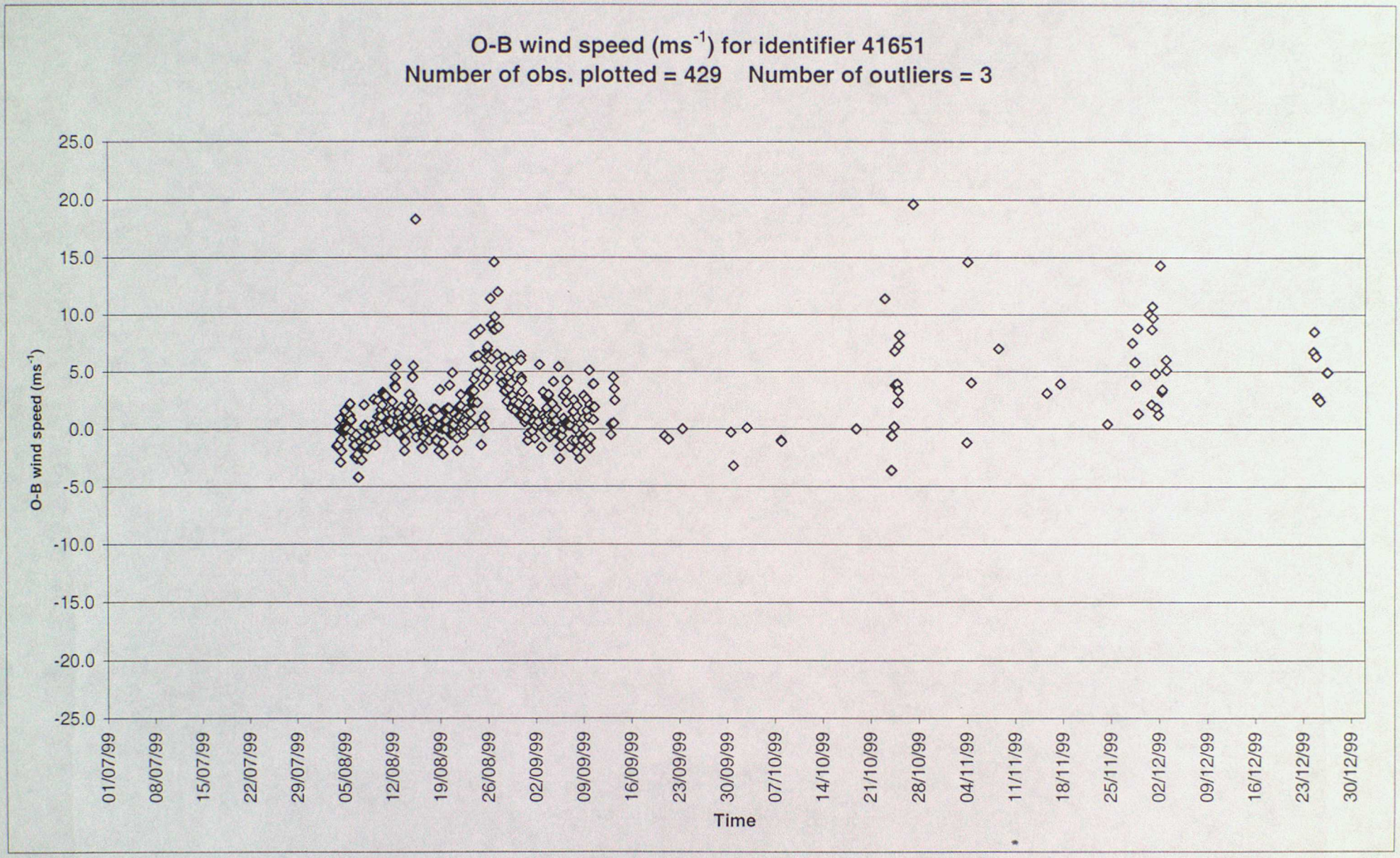
FIG 11:
PLOT OF NUMBER OF SHIP WIND DIRECTION OBS. DATE:- JULY - DECEMBER 1999
ONLY OBSERVATIONS PASSING QUALITY CONTROL INCLUDED

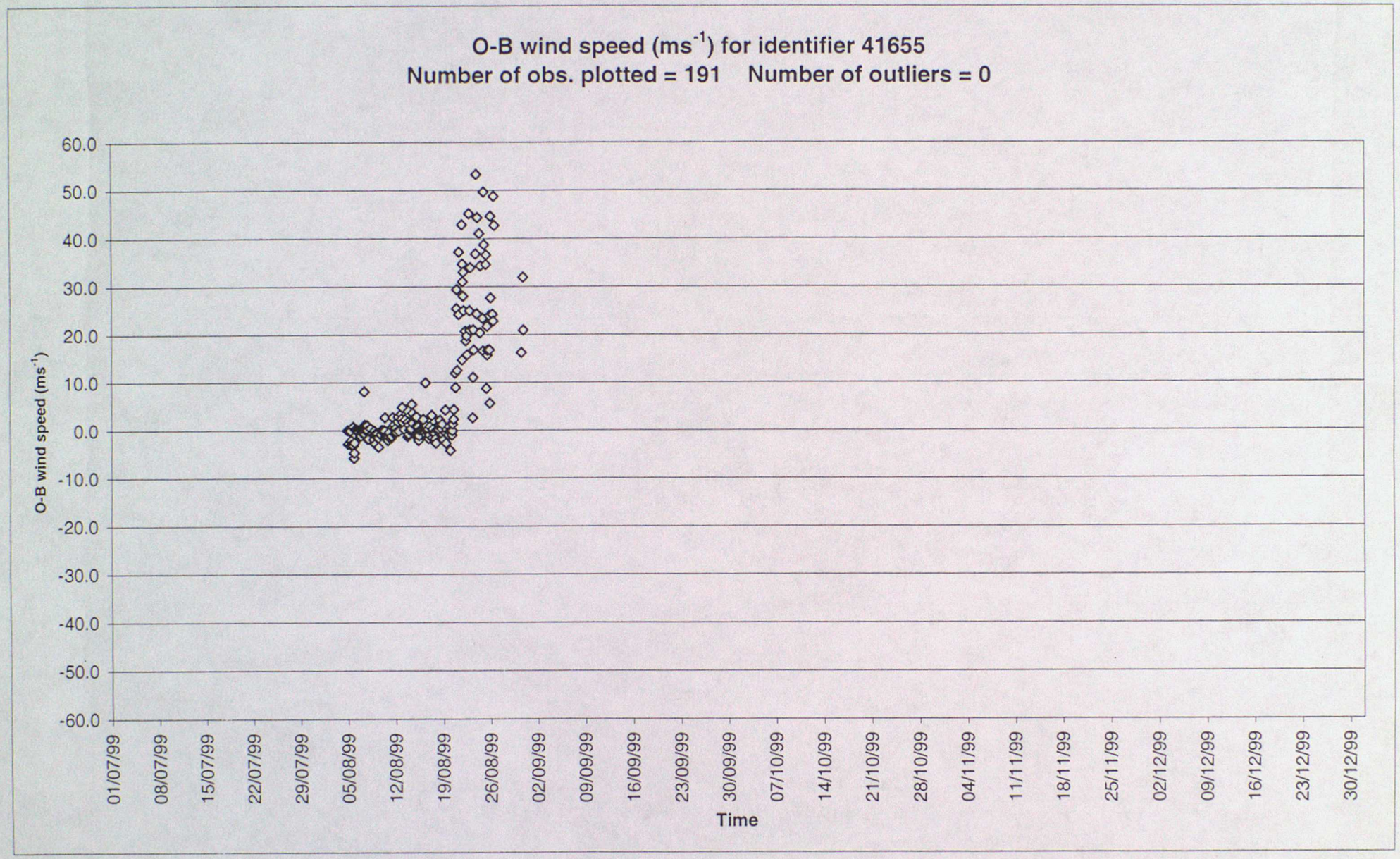


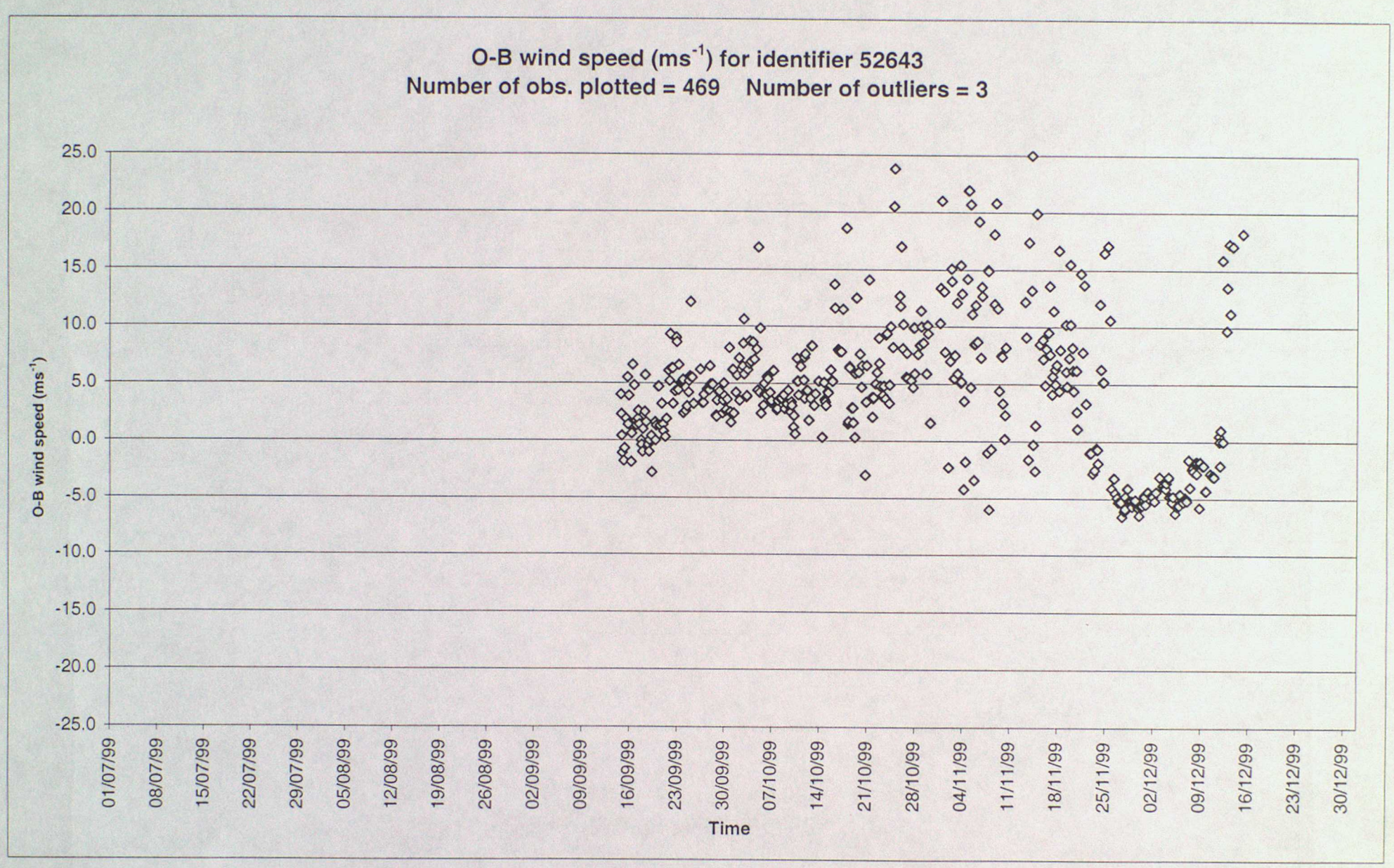

O-B wind speed (ms-1) for identifier 41524
Number of obs. plotted = 836 Number of outliers = 0
O-B wind speed (ms-1)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

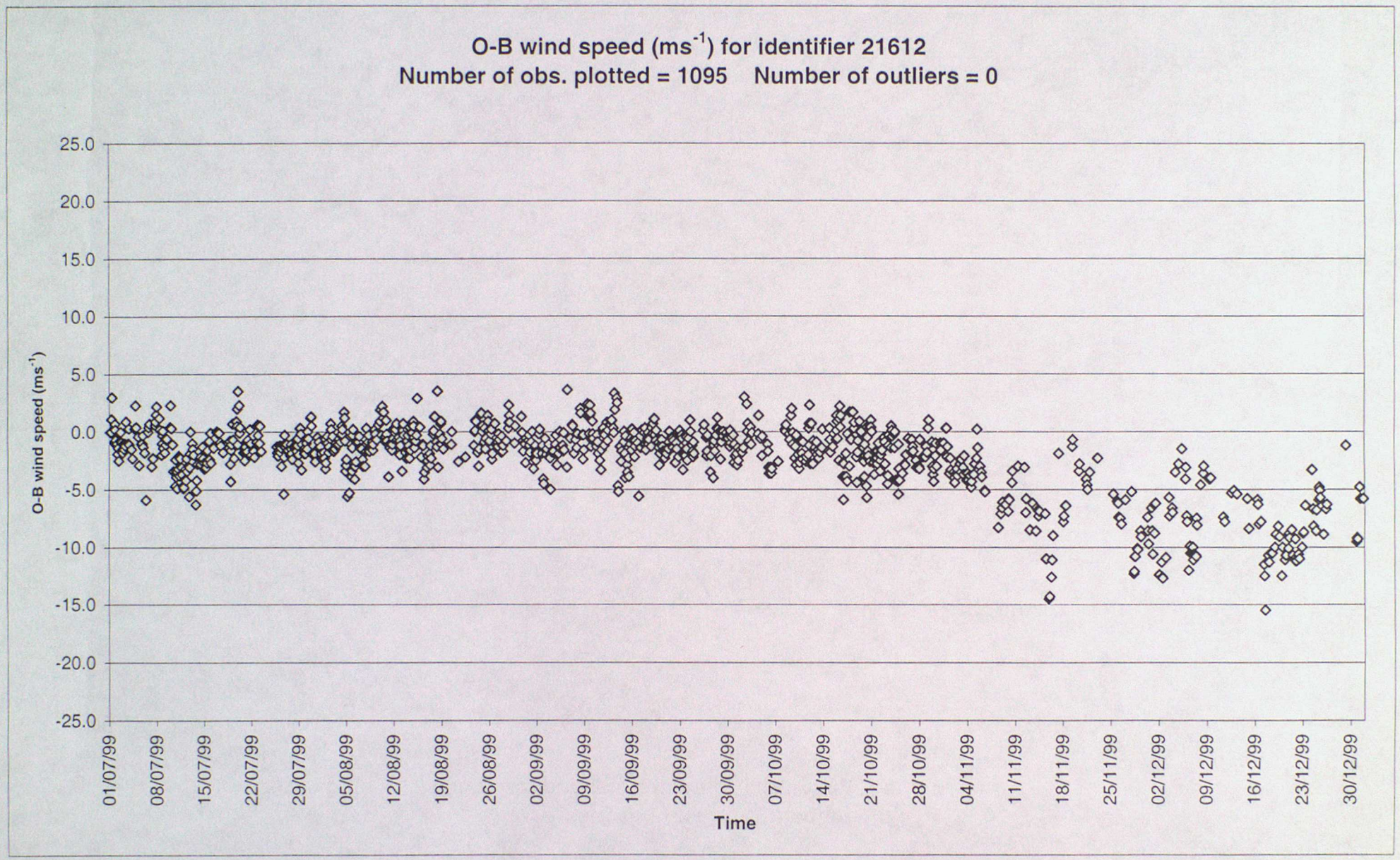

O-B wind speed (ms-1) for identifier 41629
Number of obs. plotted = 880 Number of outliers = 0
O-B wind speed (ms-1)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

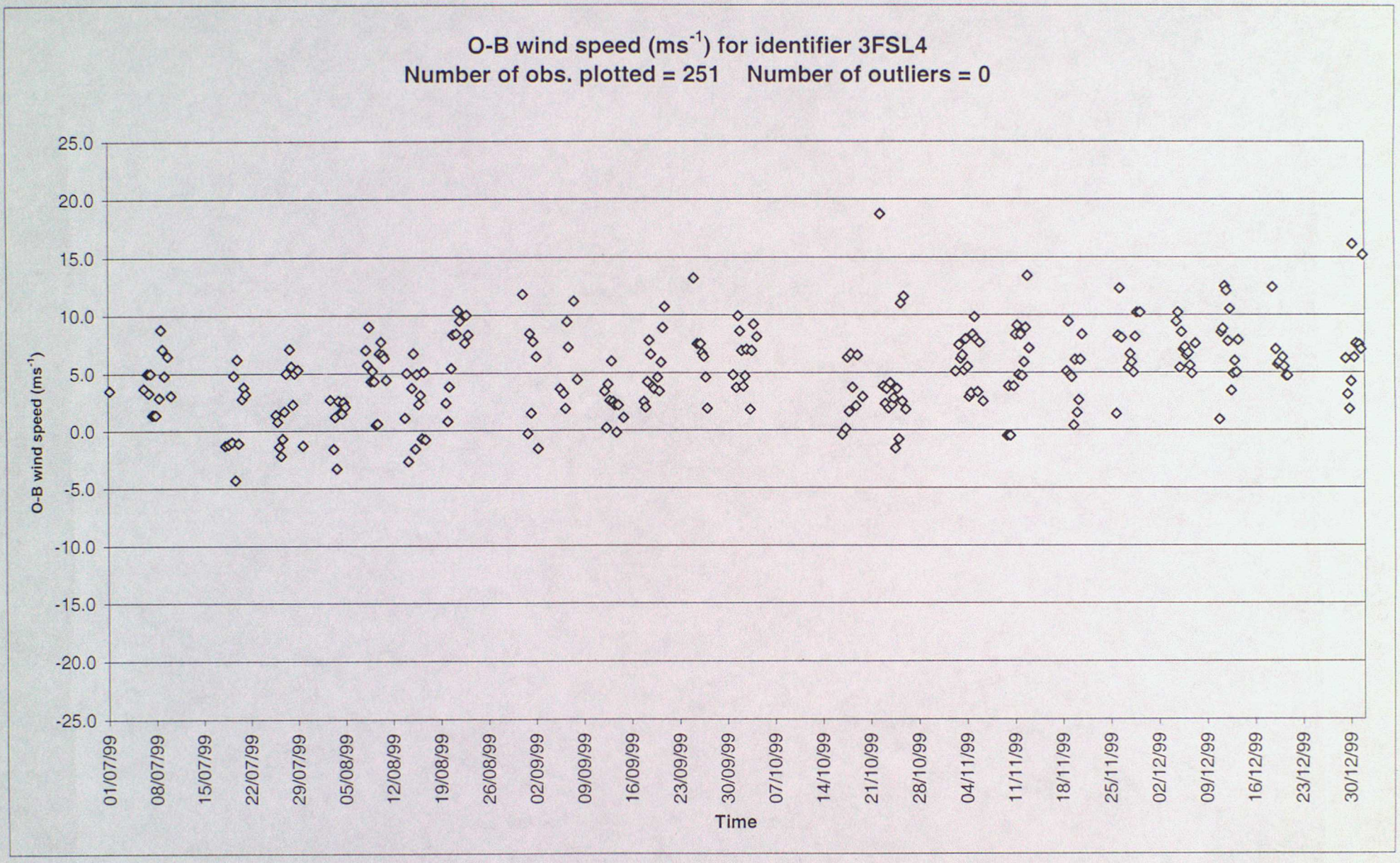

O-B wind speed (ms-1) for identifier 41644
Number of obs. plotted = 394 Number of outliers = 0
O-B wind speed (ms-1)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

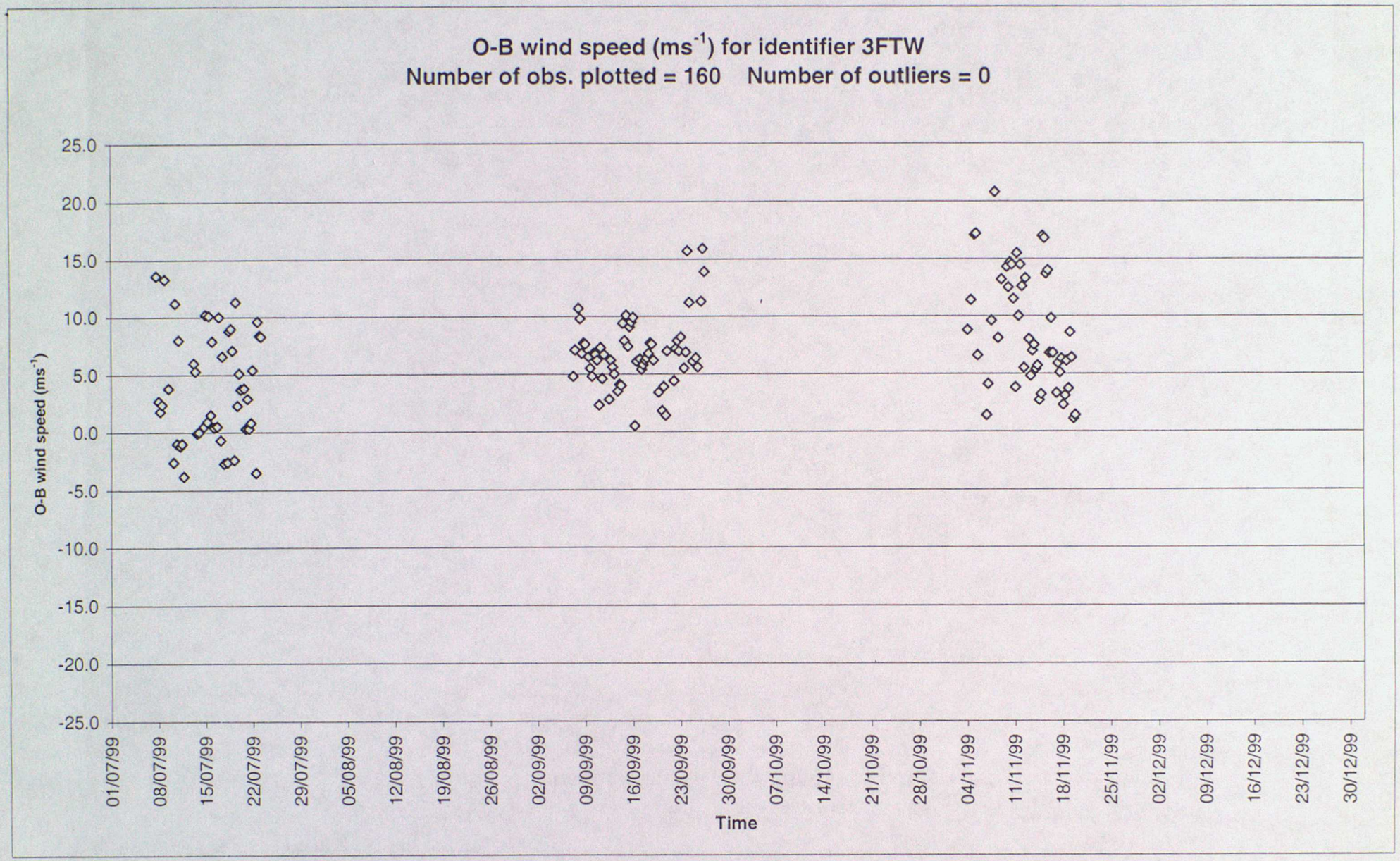

O-B wind speed (ms-1) for identifier 41651
Number of obs. plotted = 429 Number of outliers = 3
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

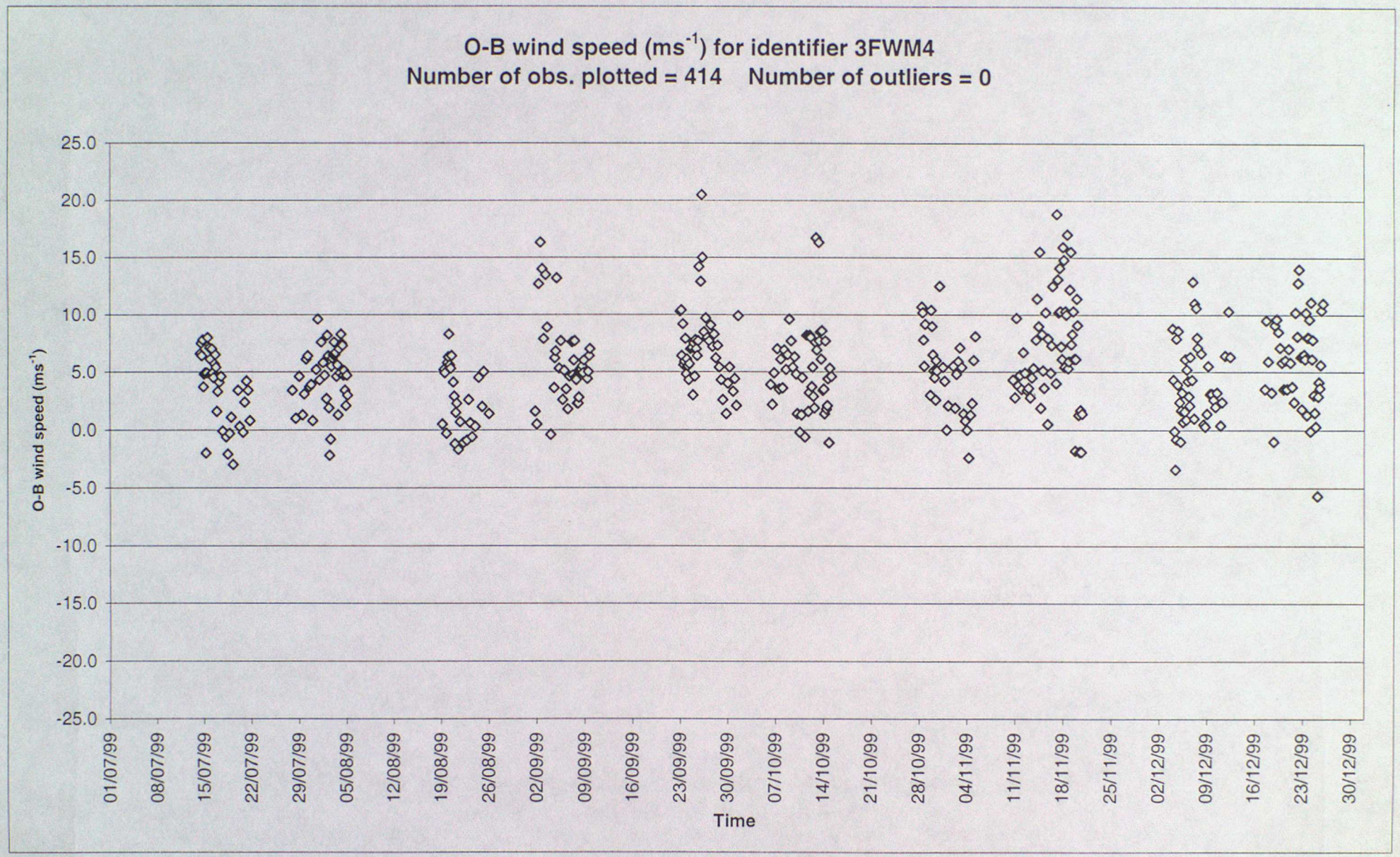

O-B wind speed (ms-1) for identifier 41655
Number of obs. plotted = 191 Number of outliers = 0
O-B wind speed (ms-1)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

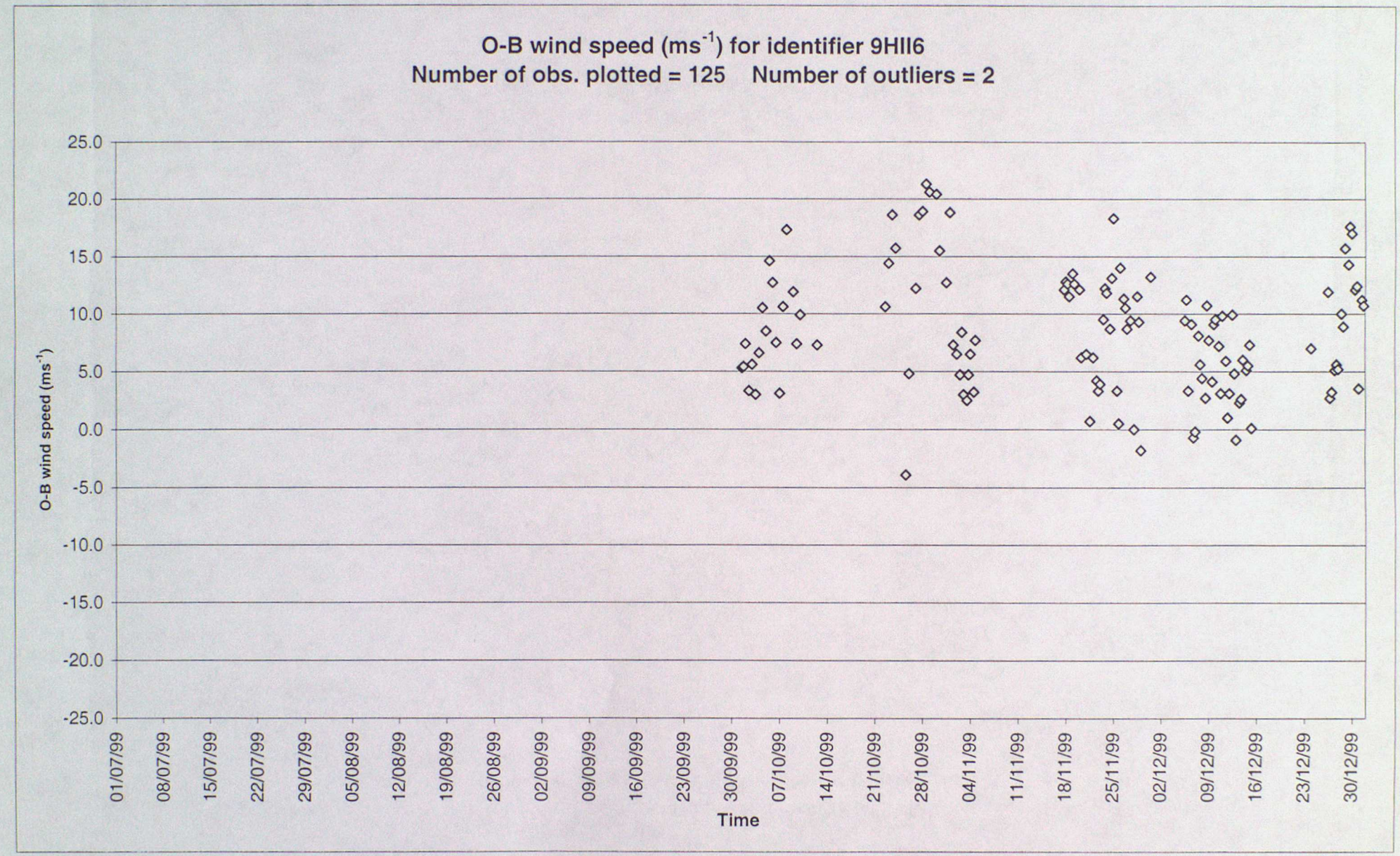

O-B wind speed (ms-1) for identifier 52643
Number of obs. plotted = 469 Number of outliers = 3
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

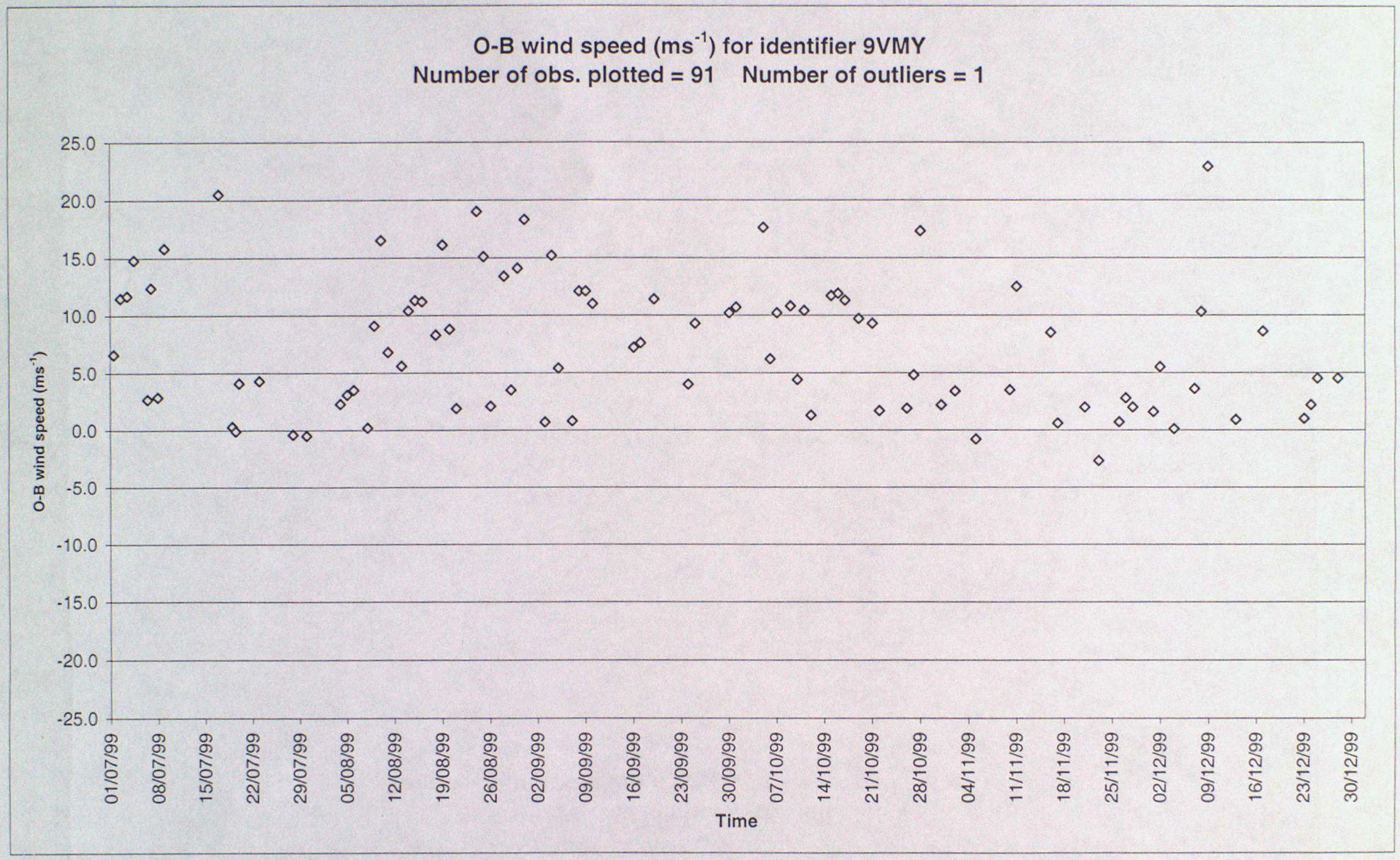

O-B wind speed (ms-1) for identifier 21612
Number of obs. plotted = 1095 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

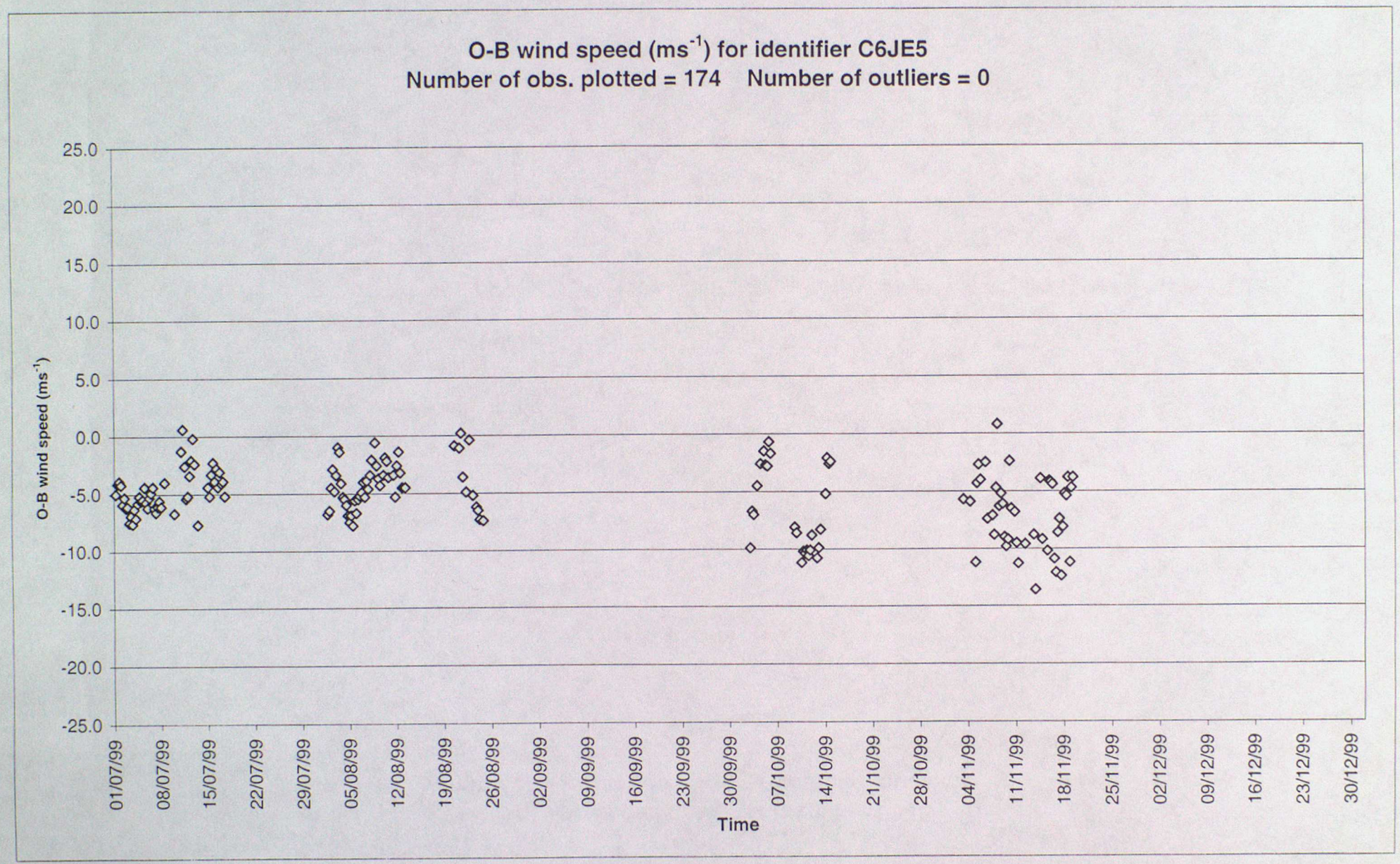

O-B wind speed (ms-1) for identifier 3FSL4
Number of obs. plotted = 251 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

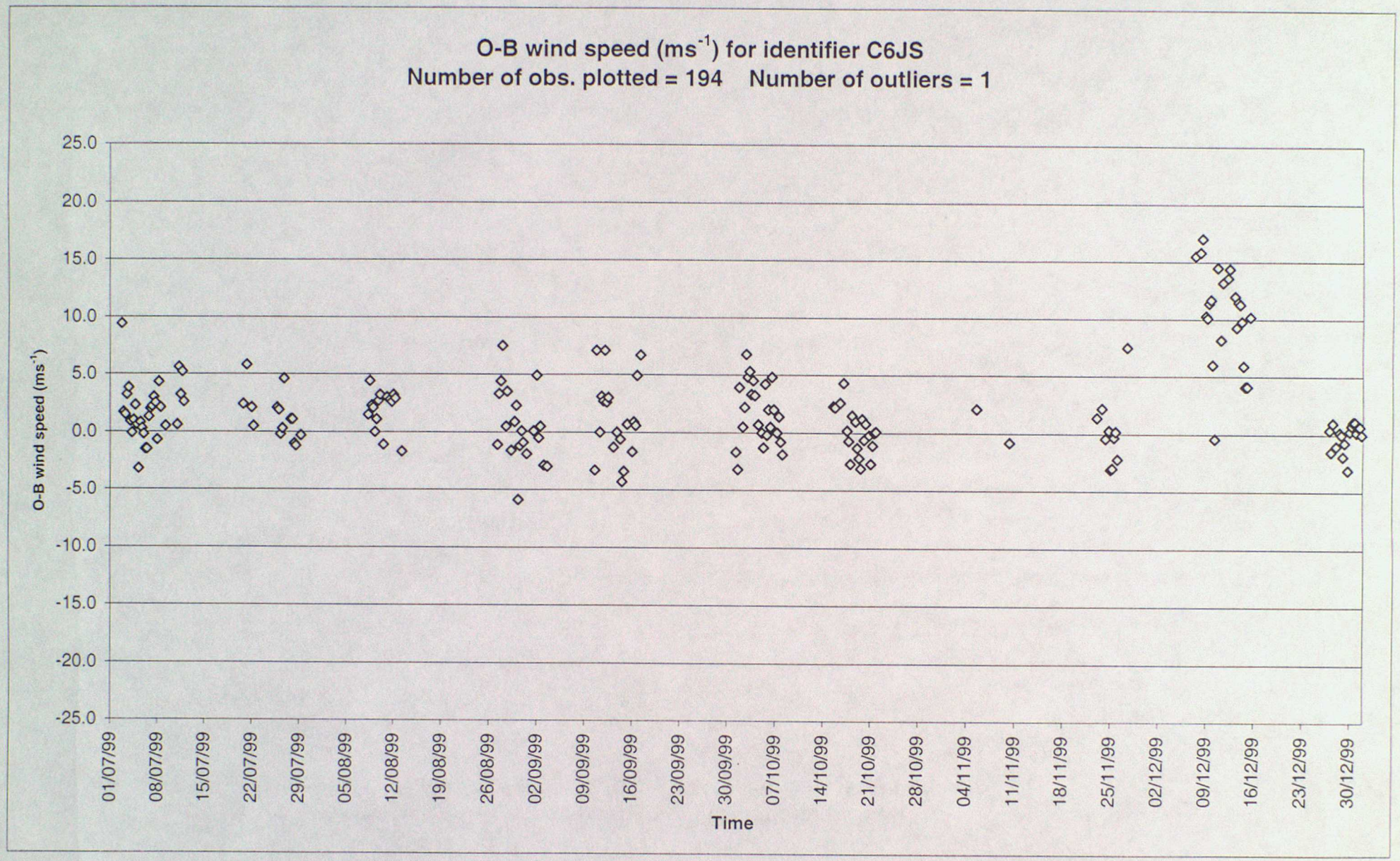

O-B wind speed (ms-1) for identifier 3FTW
Number of obs. plotted = 160 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

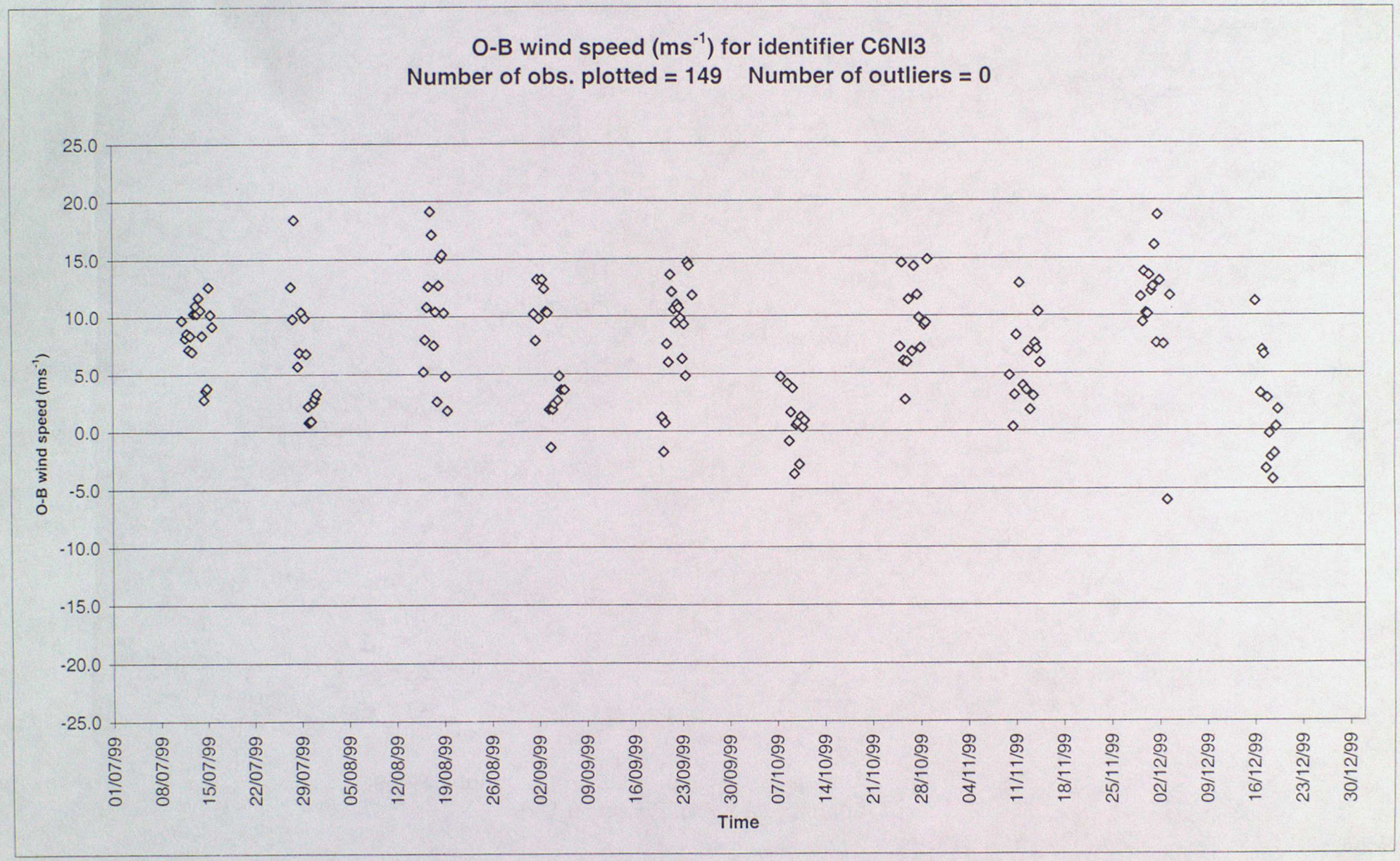

O-B wind speed (ms-1) for identifier 3FWM4
Number of obs. plotted = 414 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

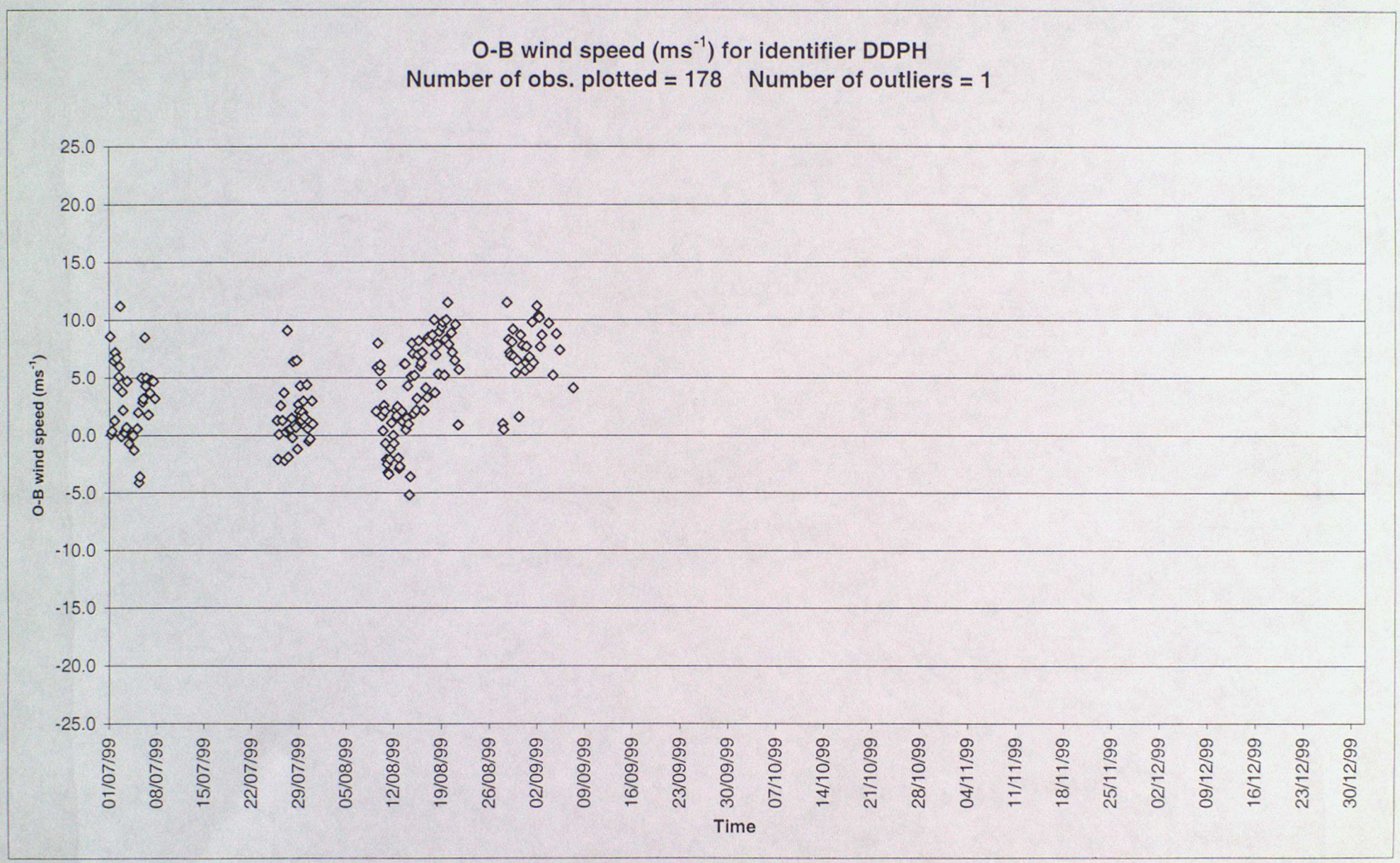

O-B wind speed (ms-1) for identifier 9HII6
Number of obs. plotted = 125 Number of outliers = 2
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

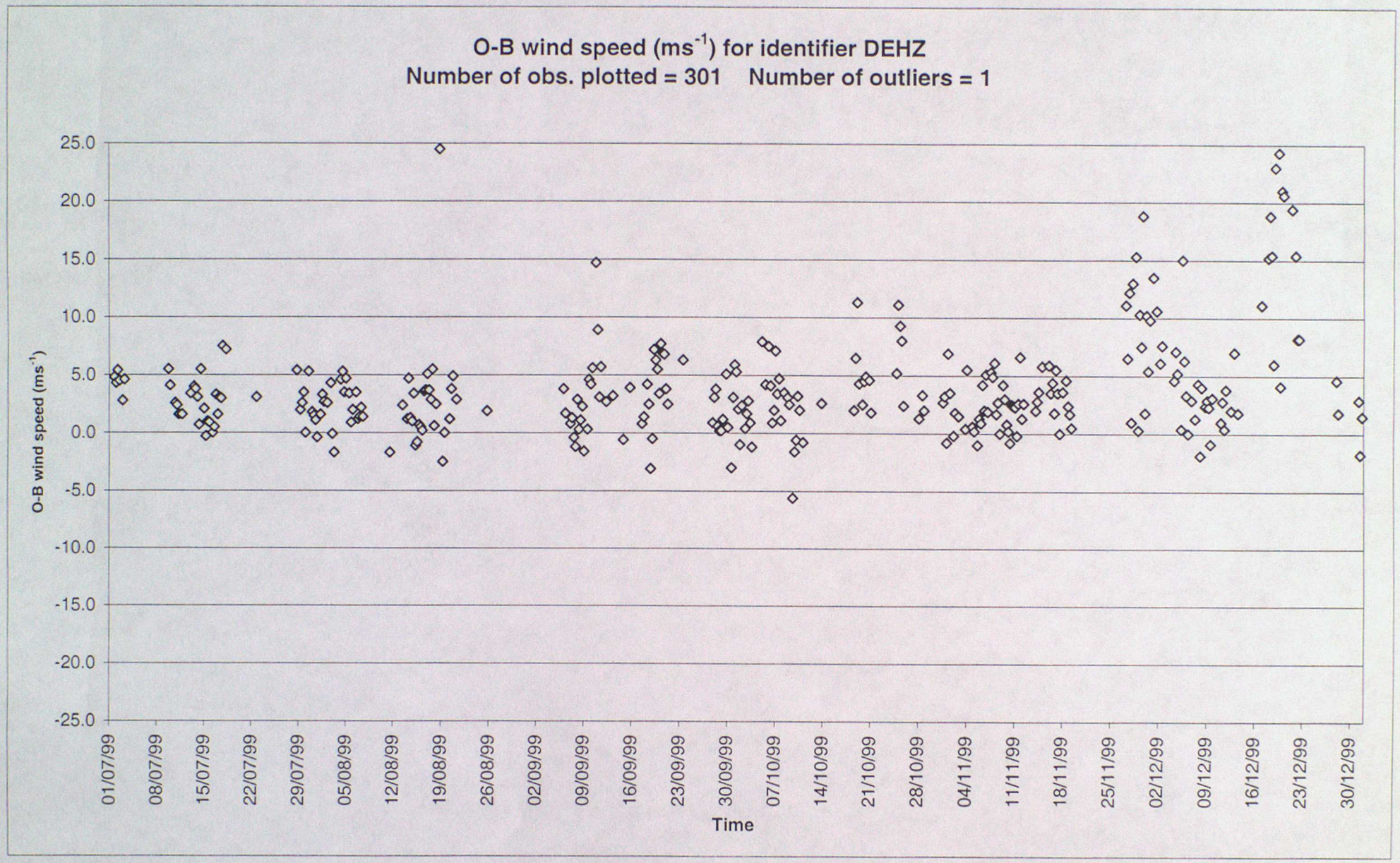

O-B wind speed (ms-1) for identifier 9VMY
Number of obs. plotted = 91 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

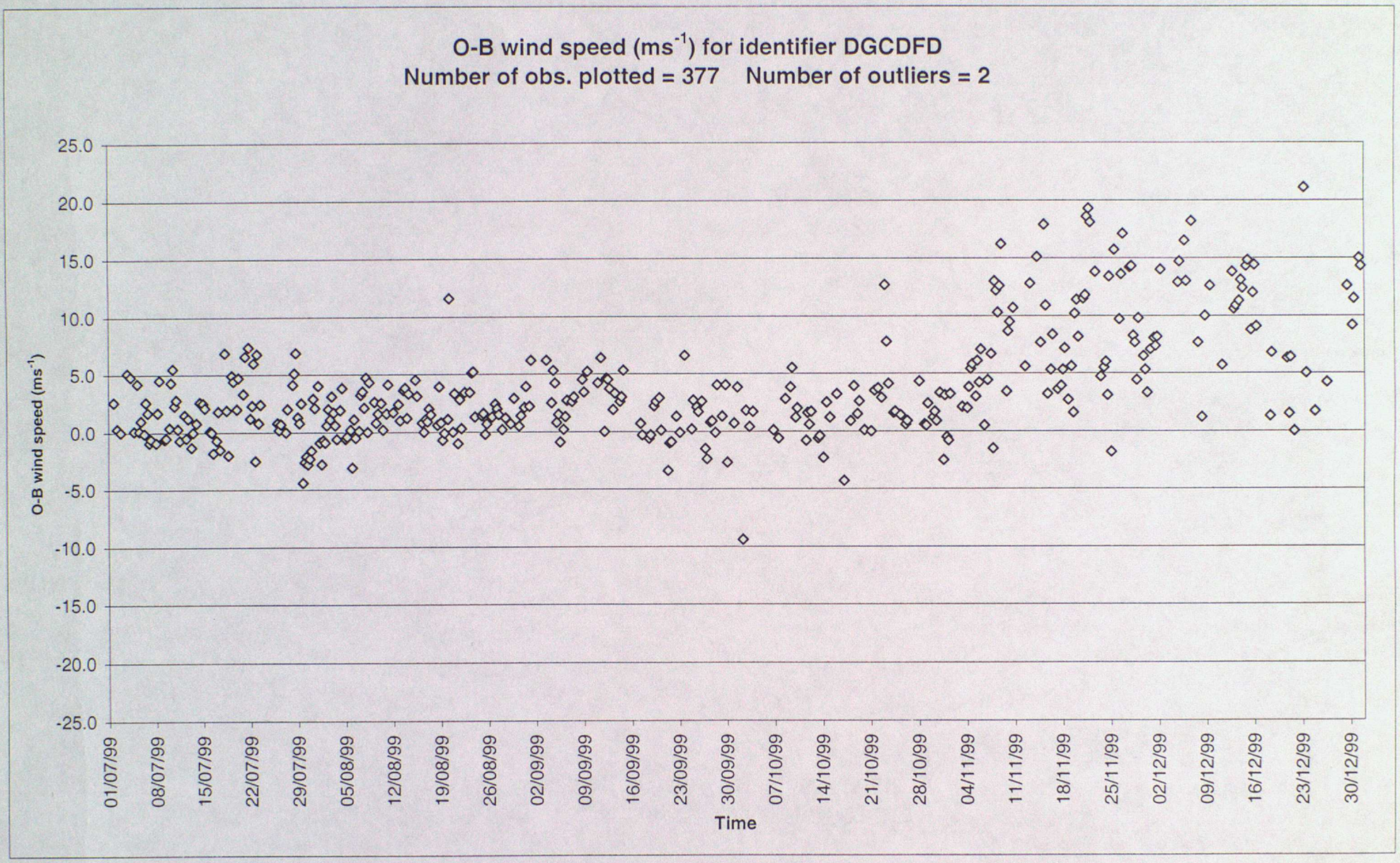

O-B wind speed (ms-1) for identifier C6JE5
Number of obs. plotted = 174 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

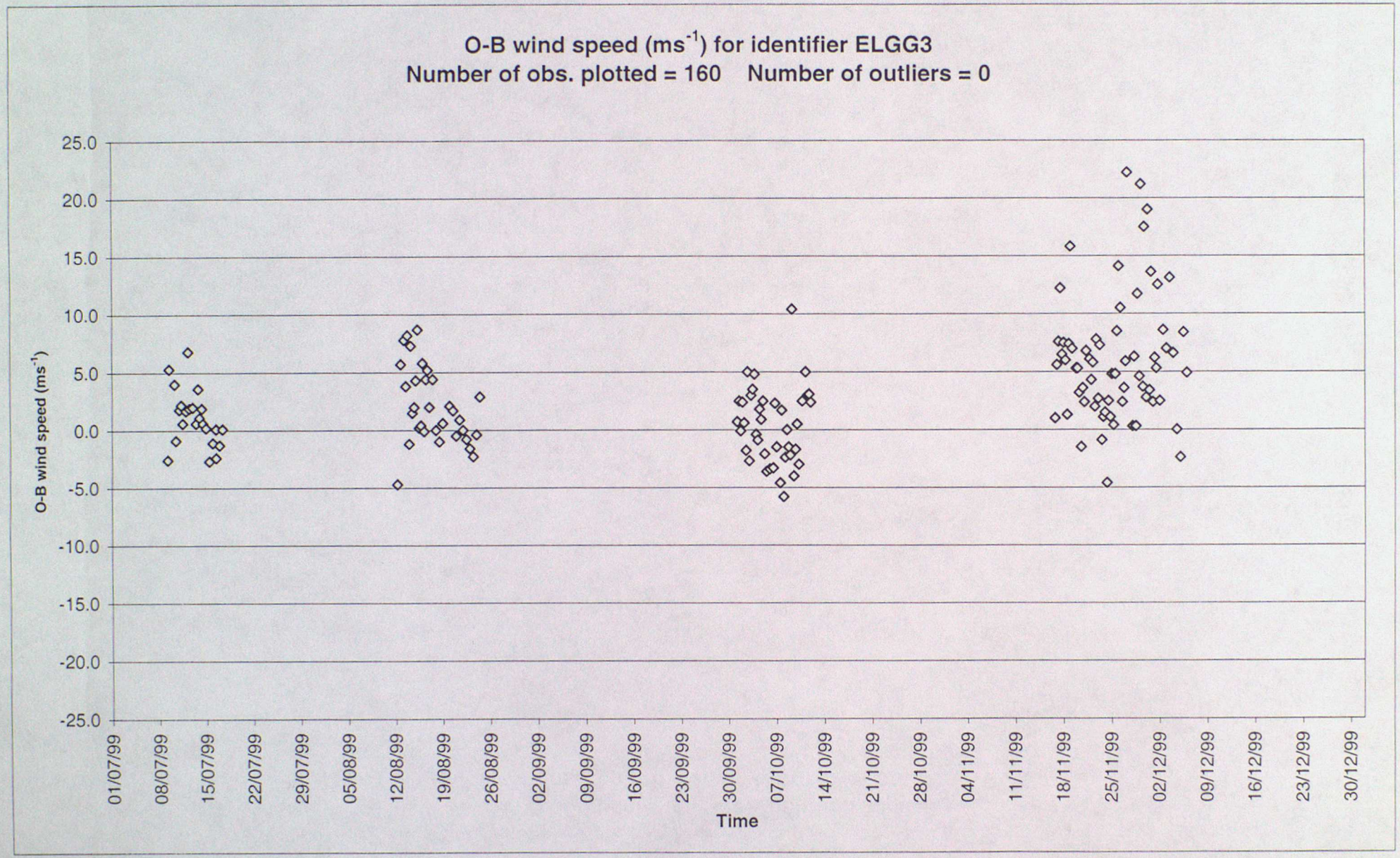

O-B wind speed (ms-1) for identifier C6JS
Number of obs. plotted = 194 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

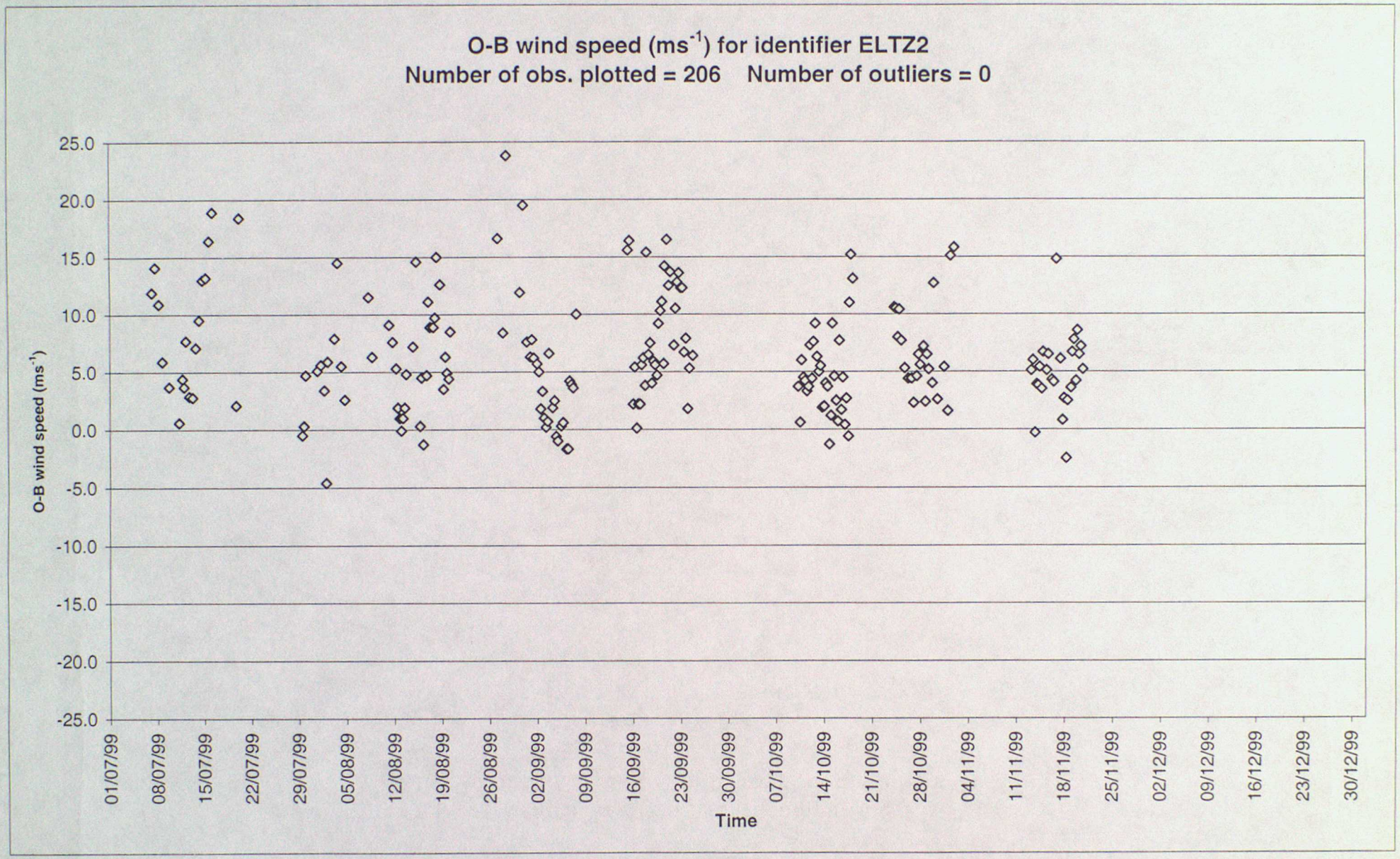

O-B wind speed (ms-1) for identifier C6NI3
Number of obs. plotted = 149 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

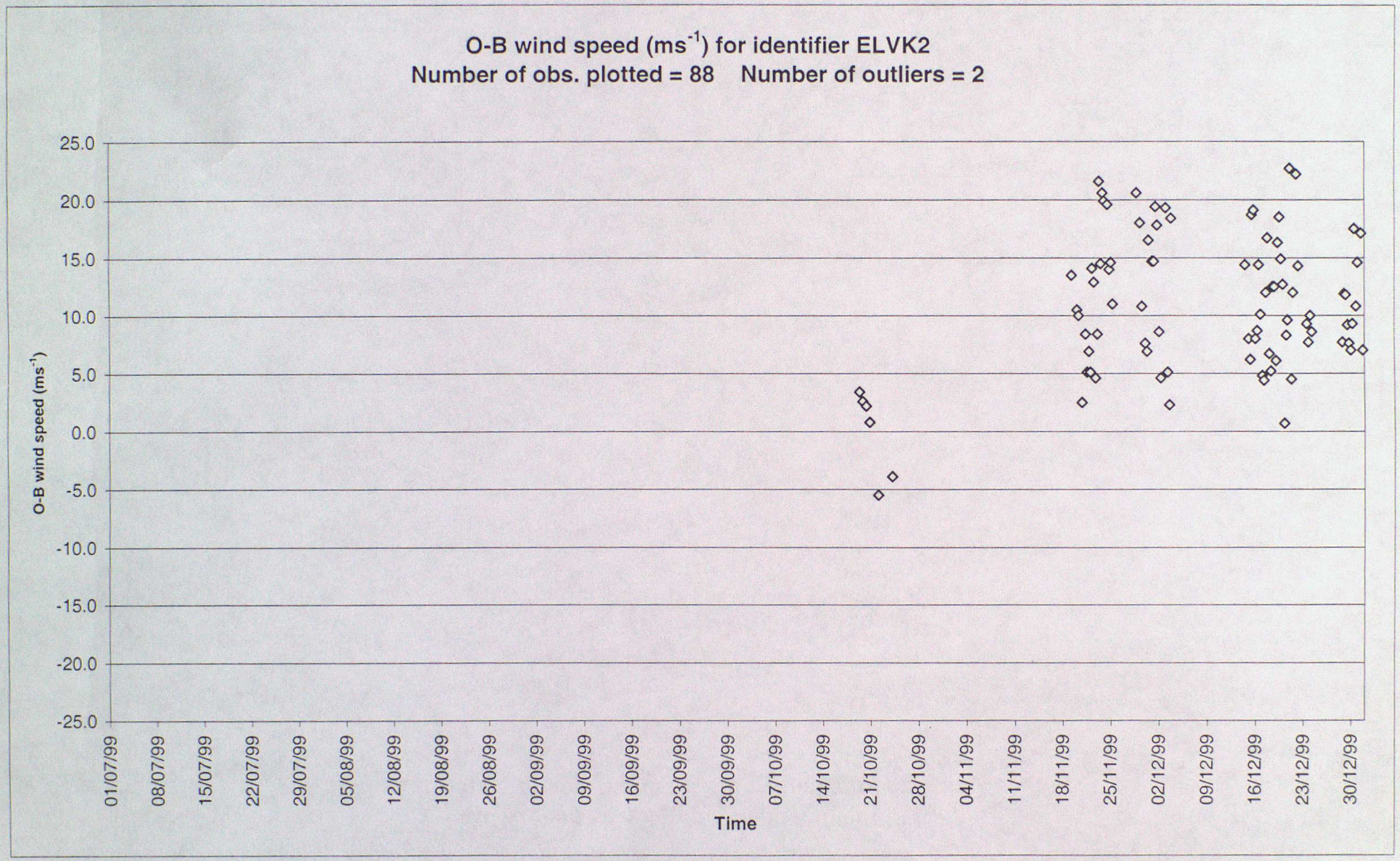

O-B wind speed (ms-1) for identifier DDPH
Number of obs. plotted = 178 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

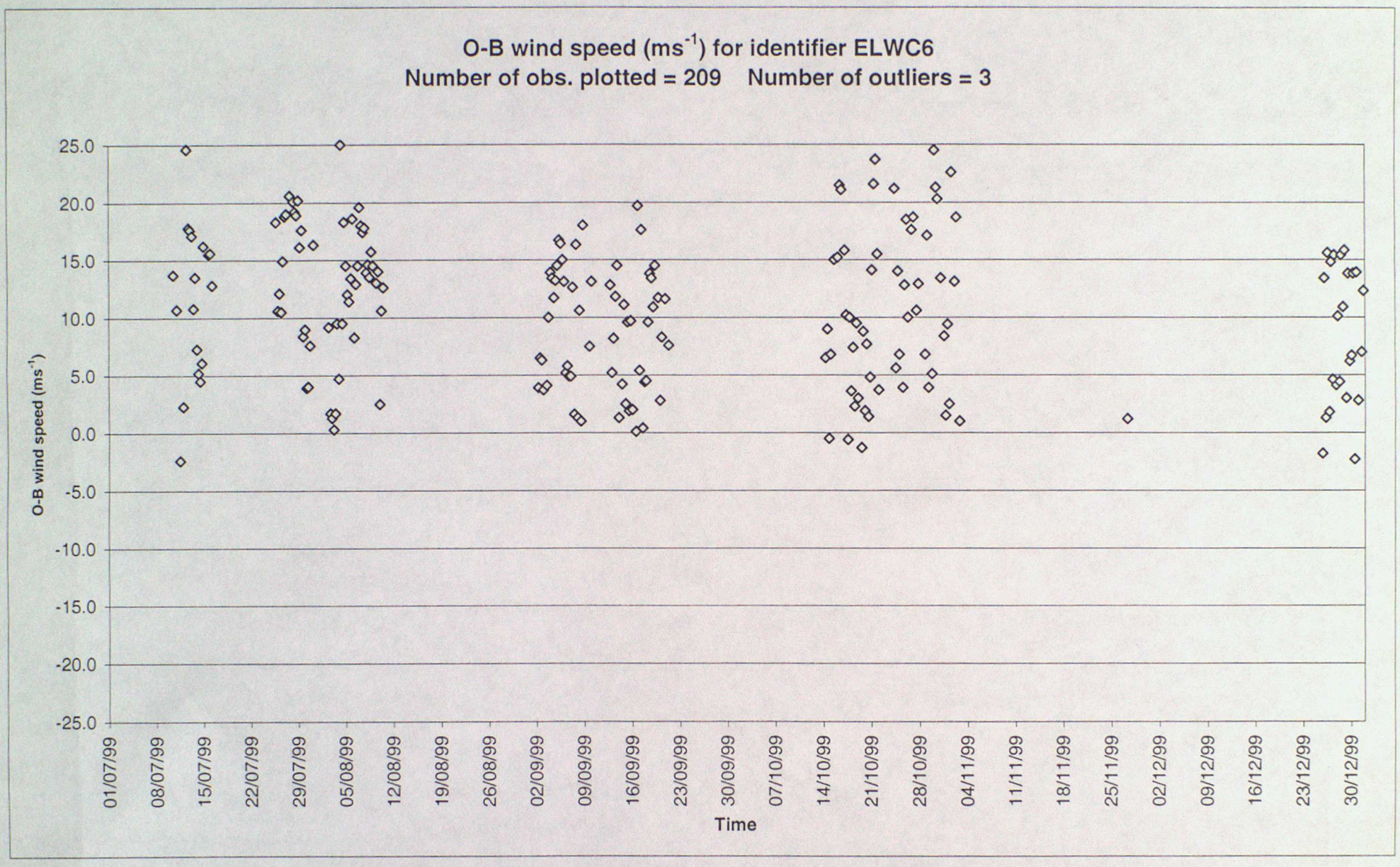

O-B wind speed (ms-1) for identifier DEHZ
Number of obs. plotted = 301 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

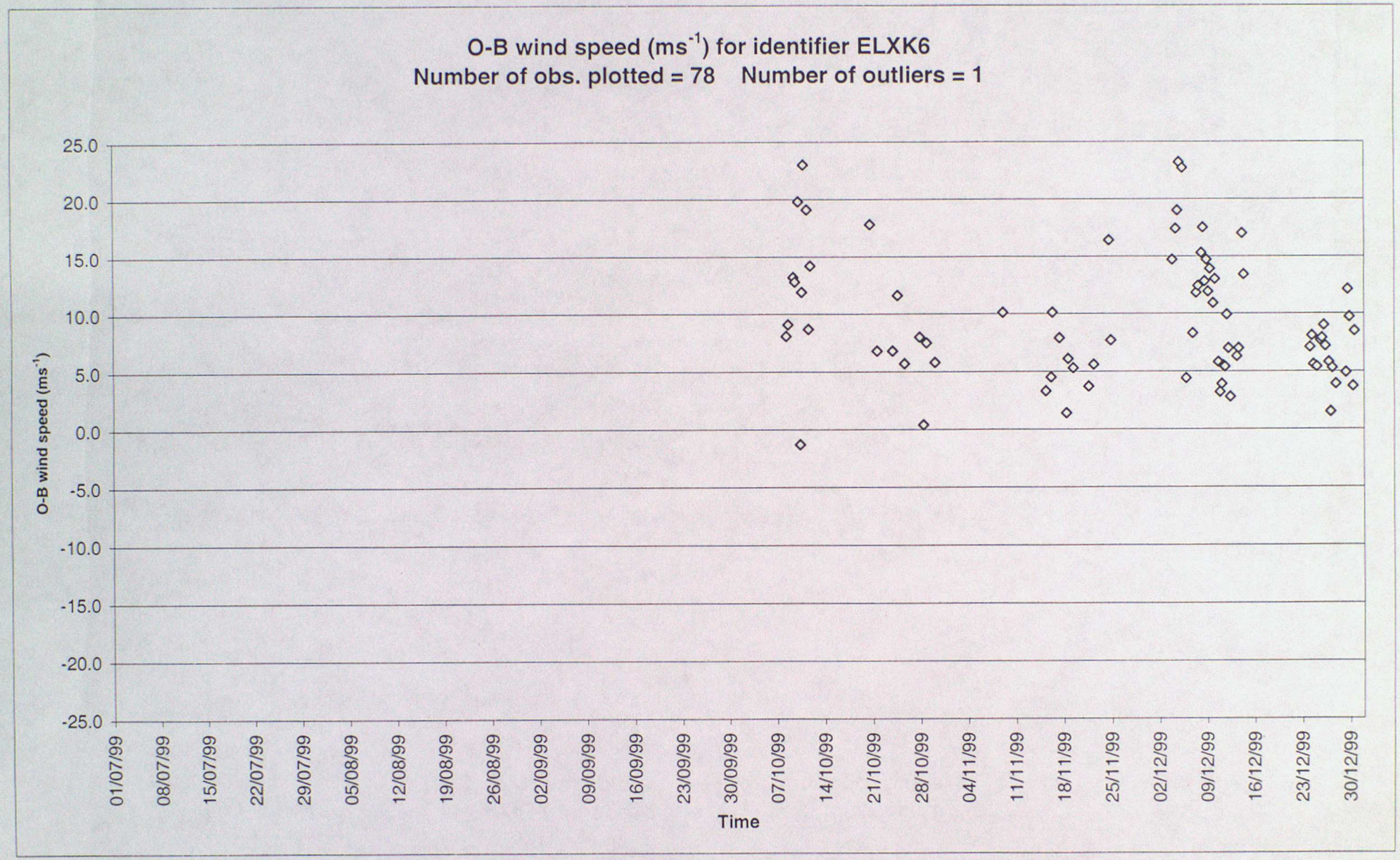

O-B wind speed (ms-1) for identifier DGCDFD
Number of obs. plotted = 377 Number of outliers = 2
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

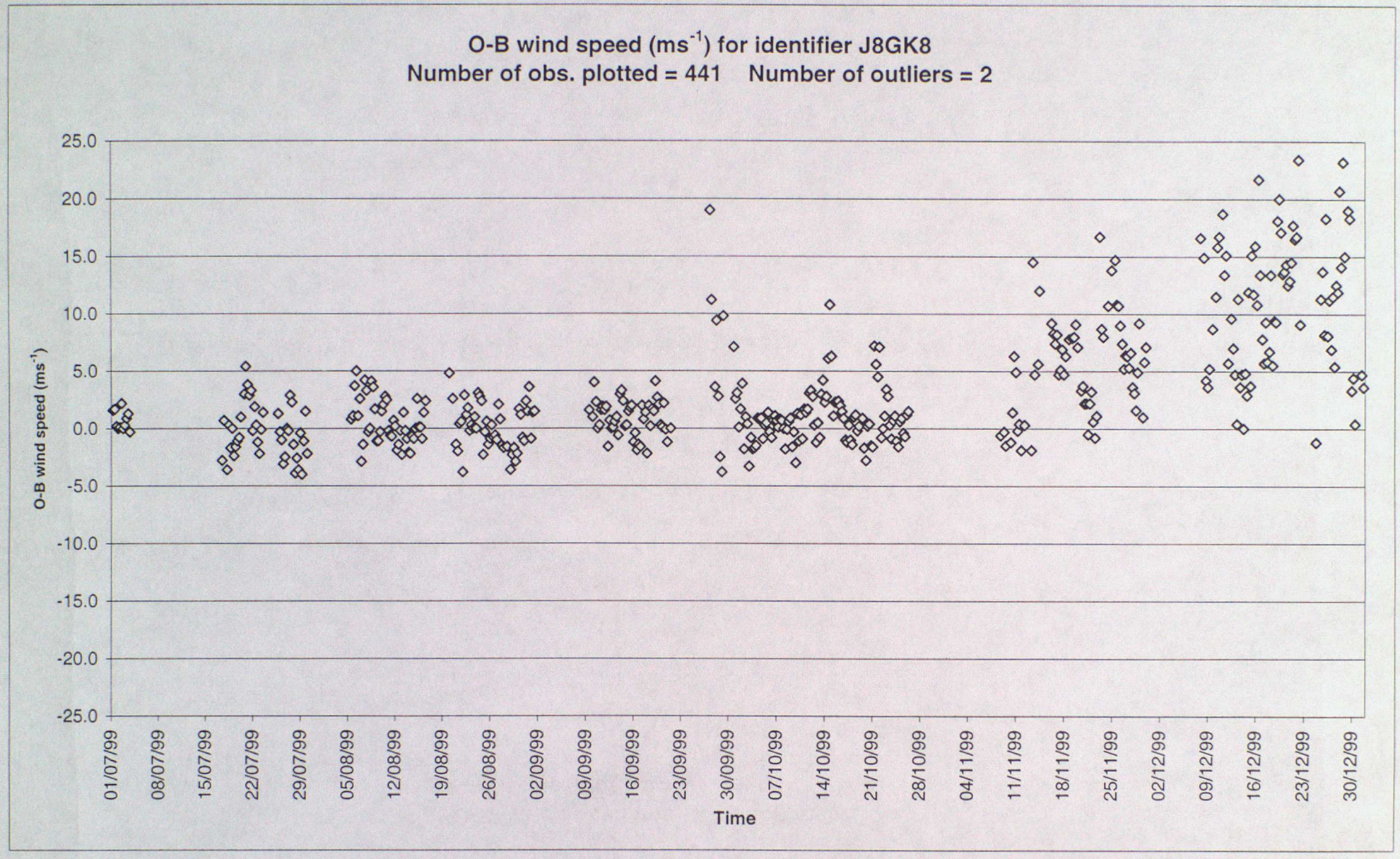

O-B wind speed (ms-1) for identifier ELGG3
Number of obs. plotted = 160 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

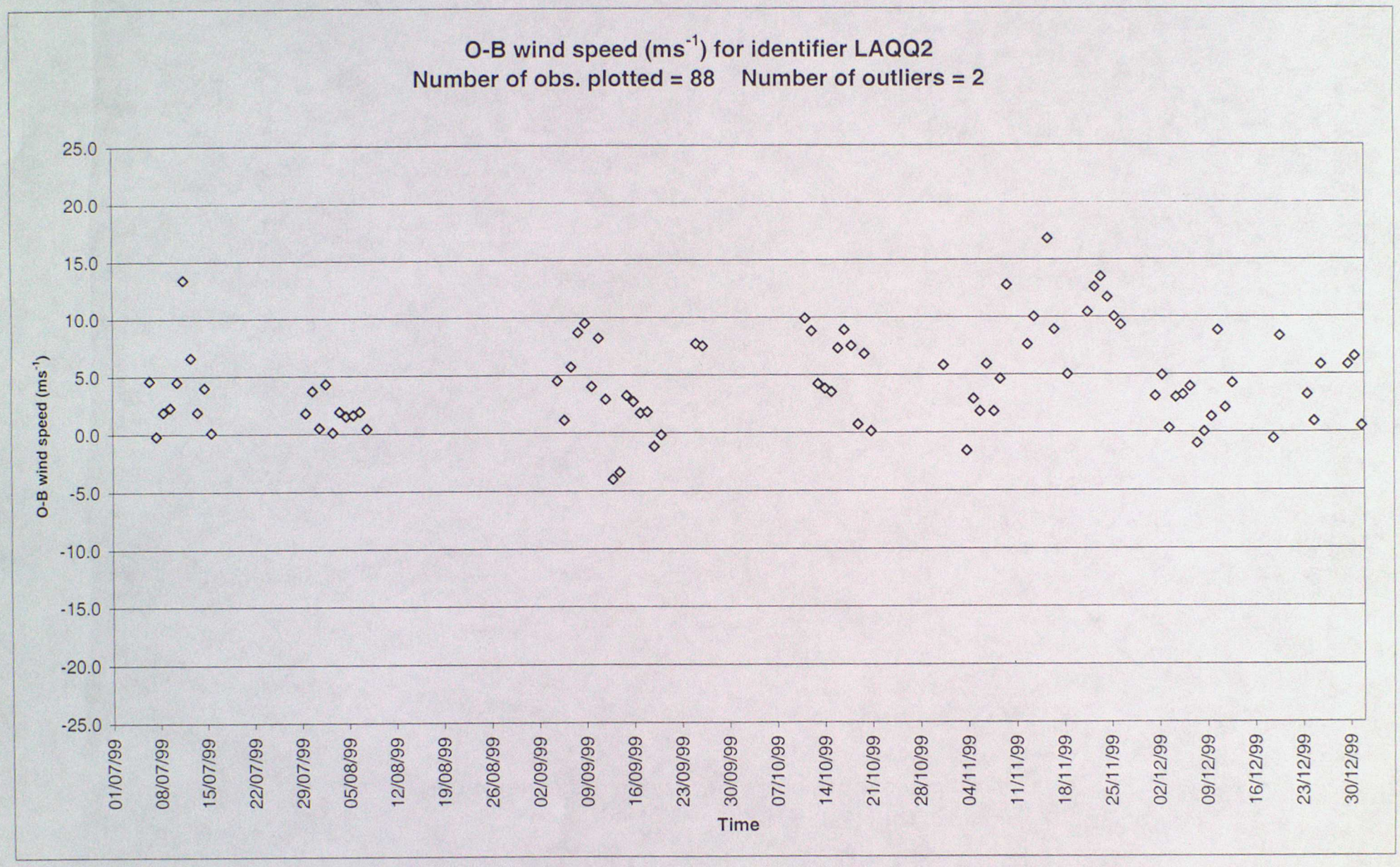

O-B wind speed (ms-1) for identifier ELTZ2
Number of obs. plotted = 206 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

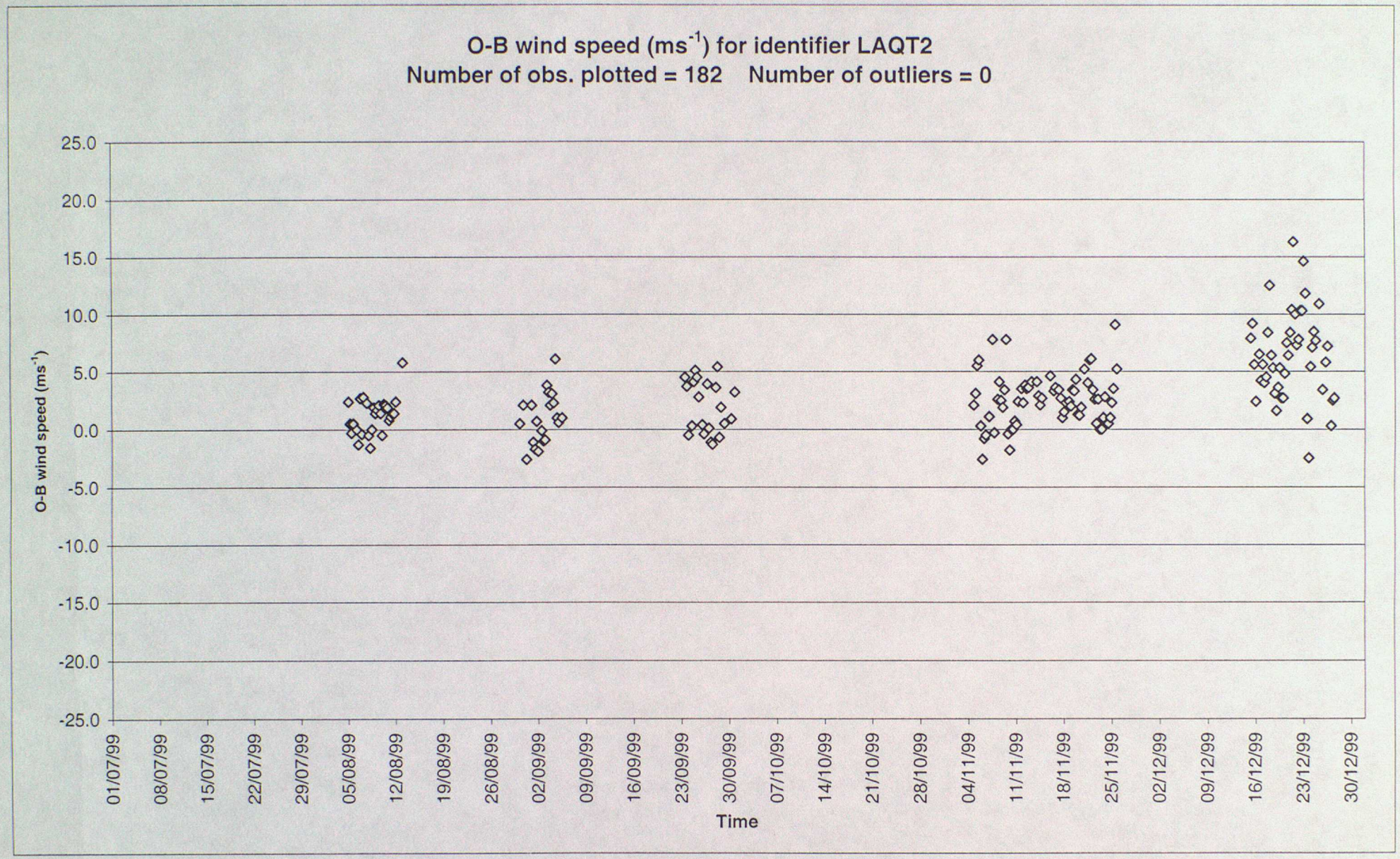

O-B wind speed (ms-1) for identifier ELVK2
Number of obs. plotted = 88 Number of outliers = 2
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

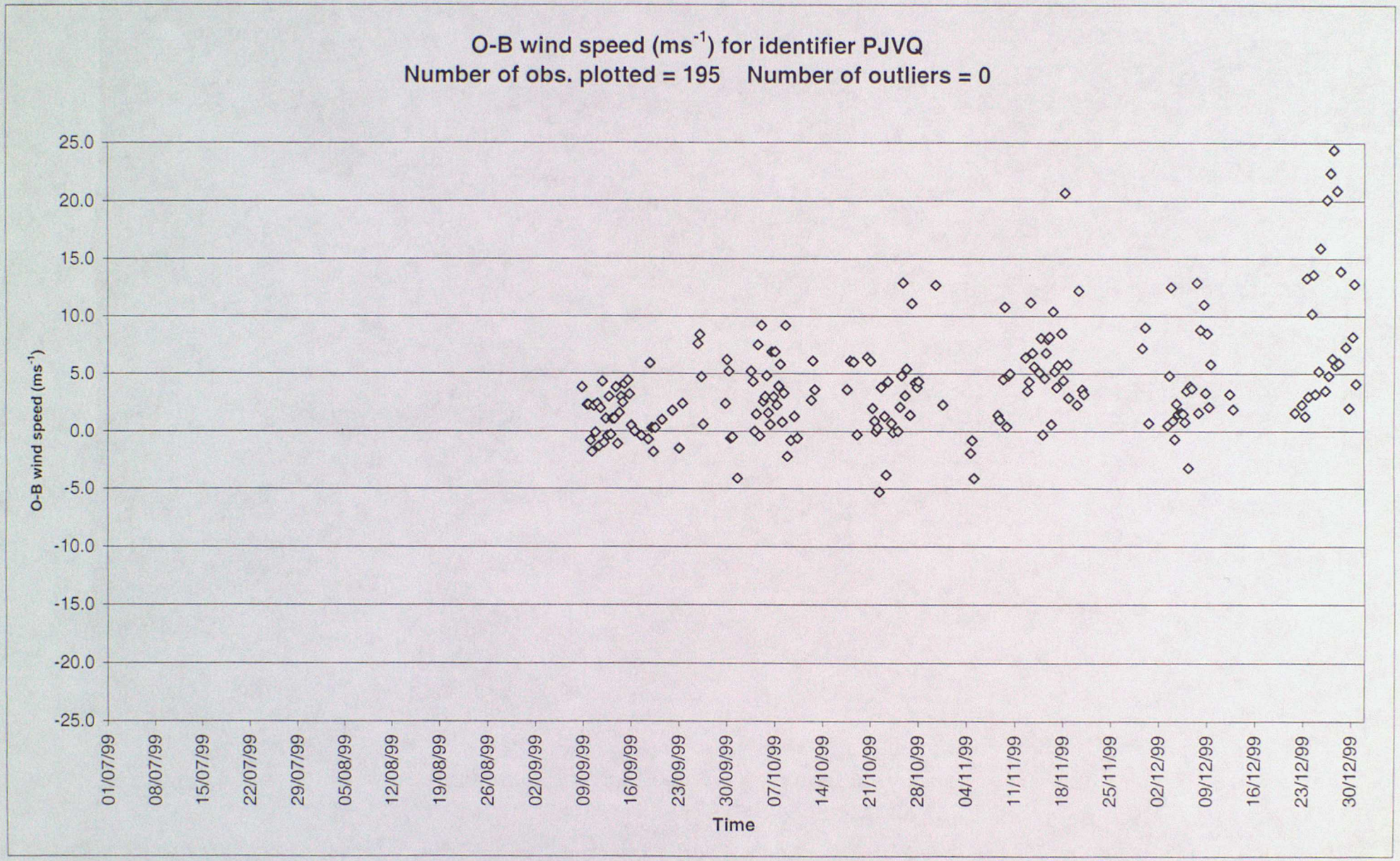

O-B wind speed (ms-1) for identifier ELWC6
Number of obs. plotted = 209 Number of outliers = 3
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

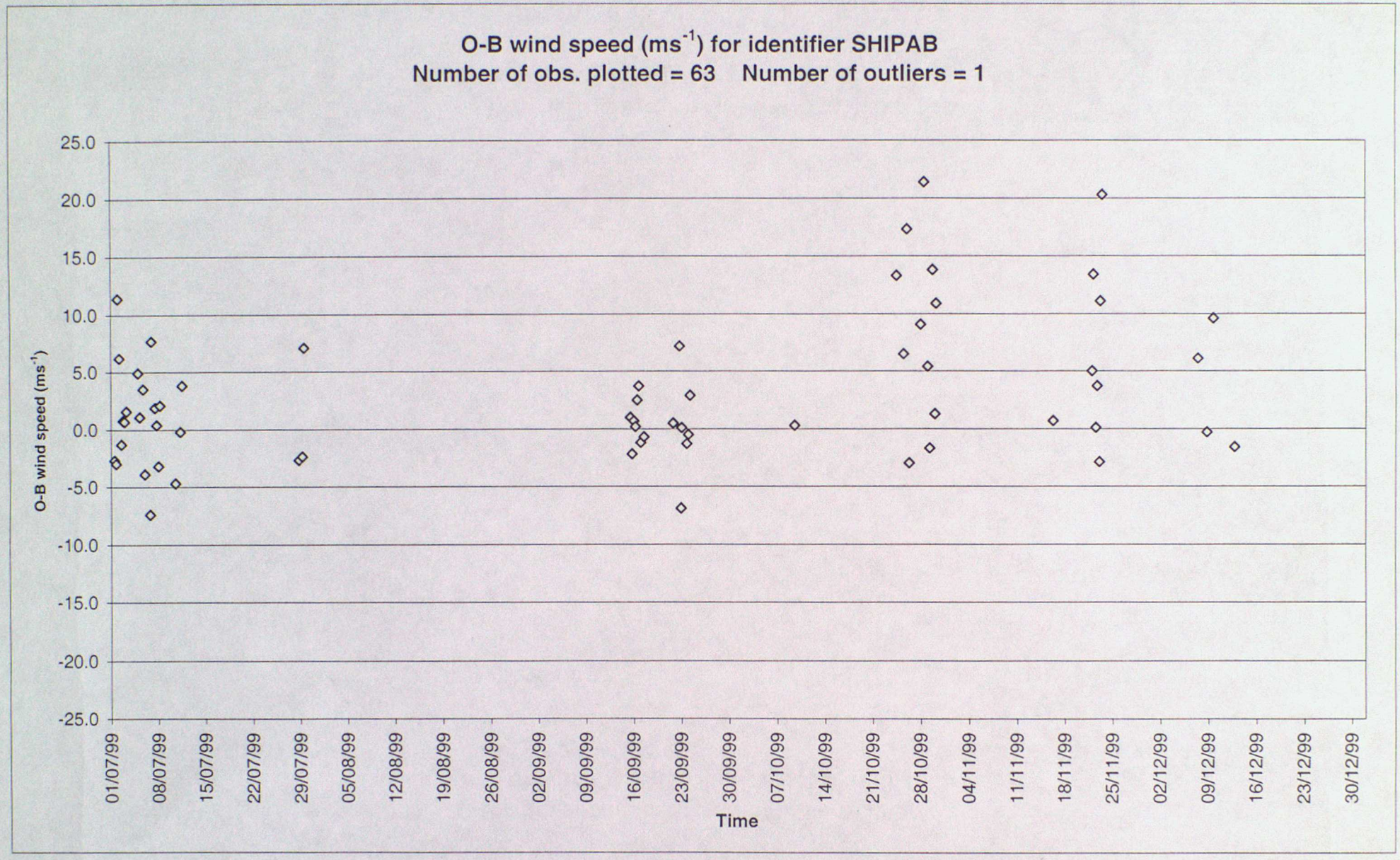

O-B wind speed (ms-1) for identifier ELXK6
Number of obs. plotted = 78 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

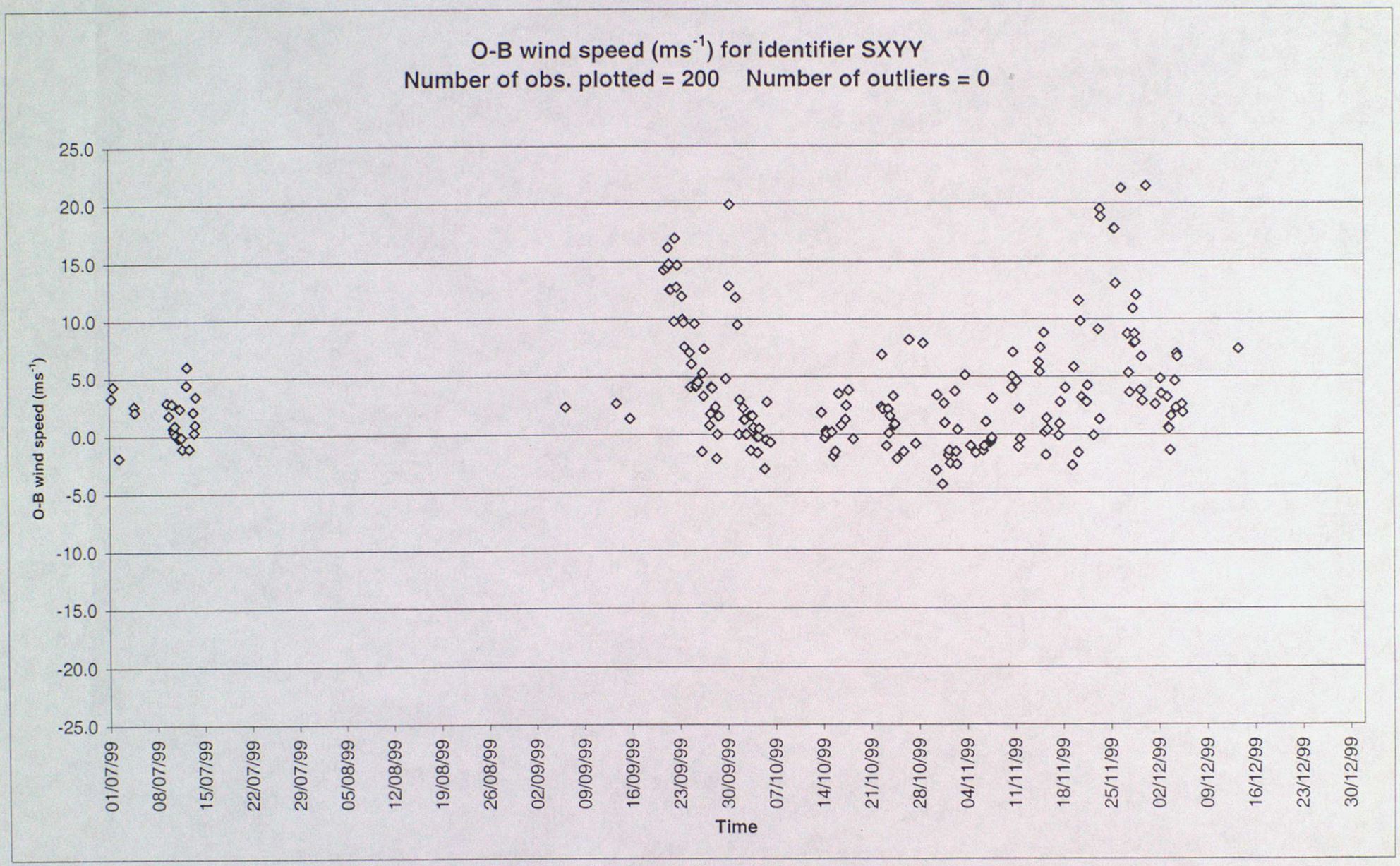

O-B wind speed (ms-1) for identifier J8GK8
Number of obs. plotted = 441 Number of outliers = 2
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

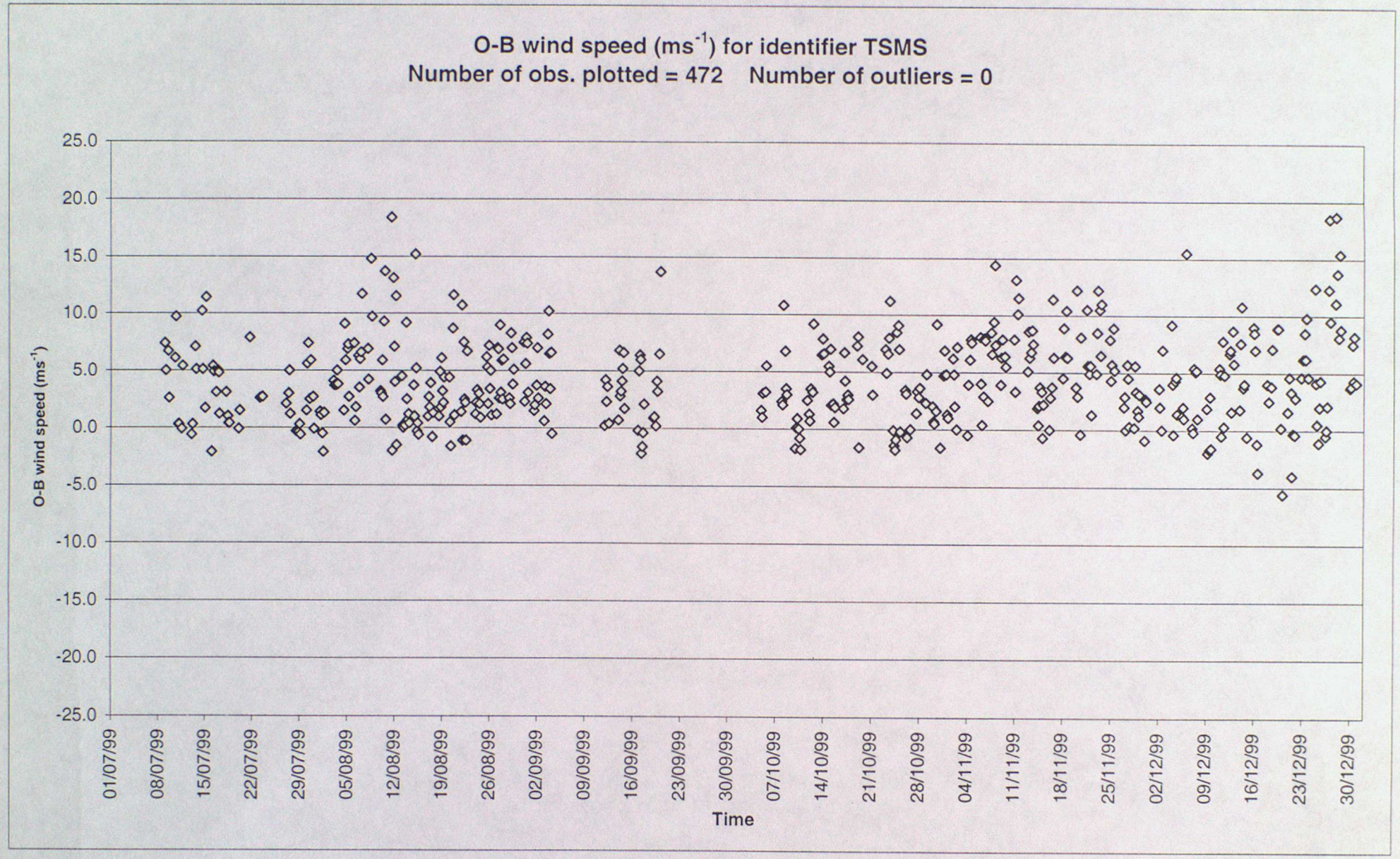

O-B wind speed (ms-1) for identifier LAQQ2
Number of obs. plotted = 88 Number of outliers = 2
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

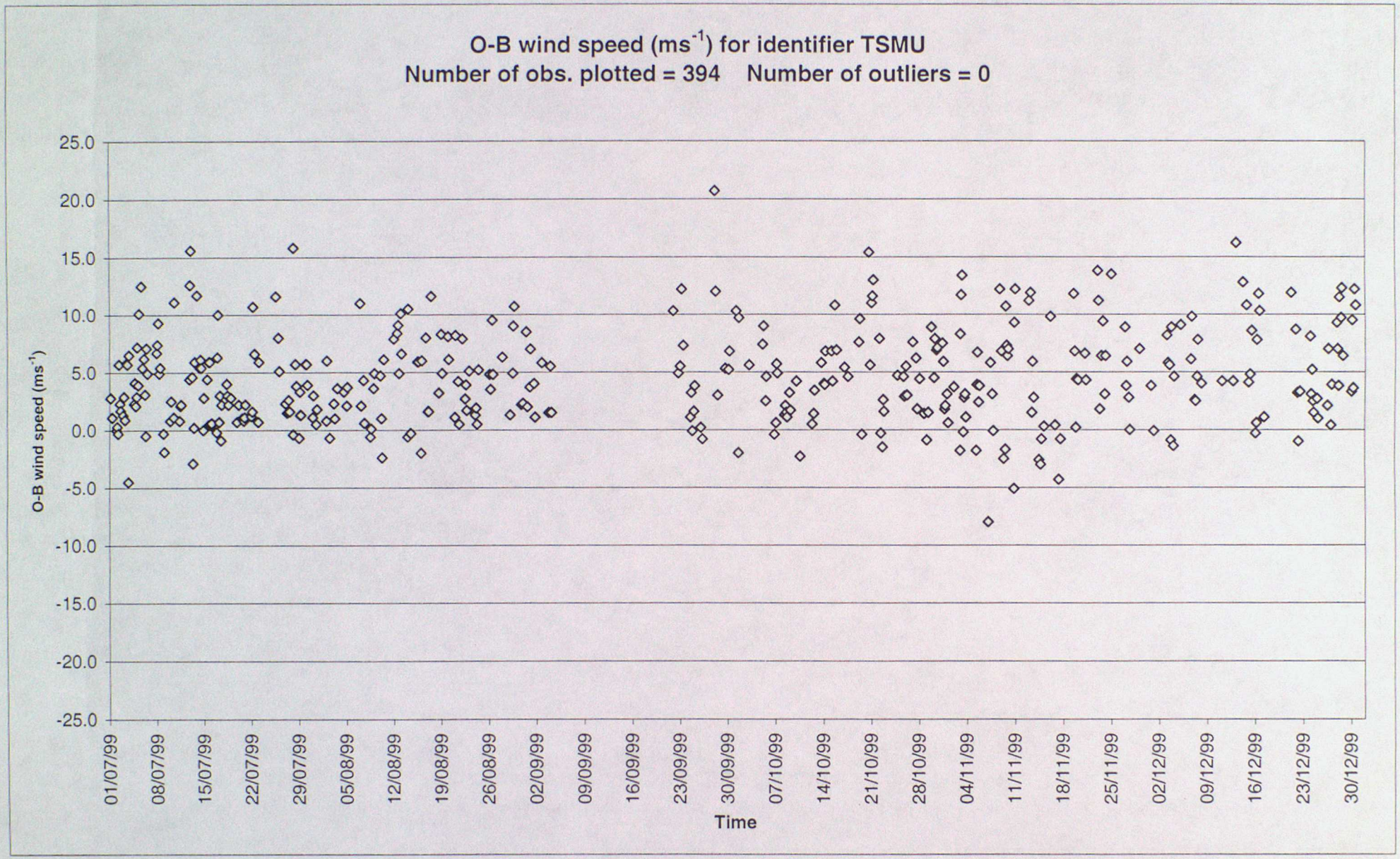

O-B wind speed (ms-1) for identifier LAQT2
Number of obs. plotted = 182 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

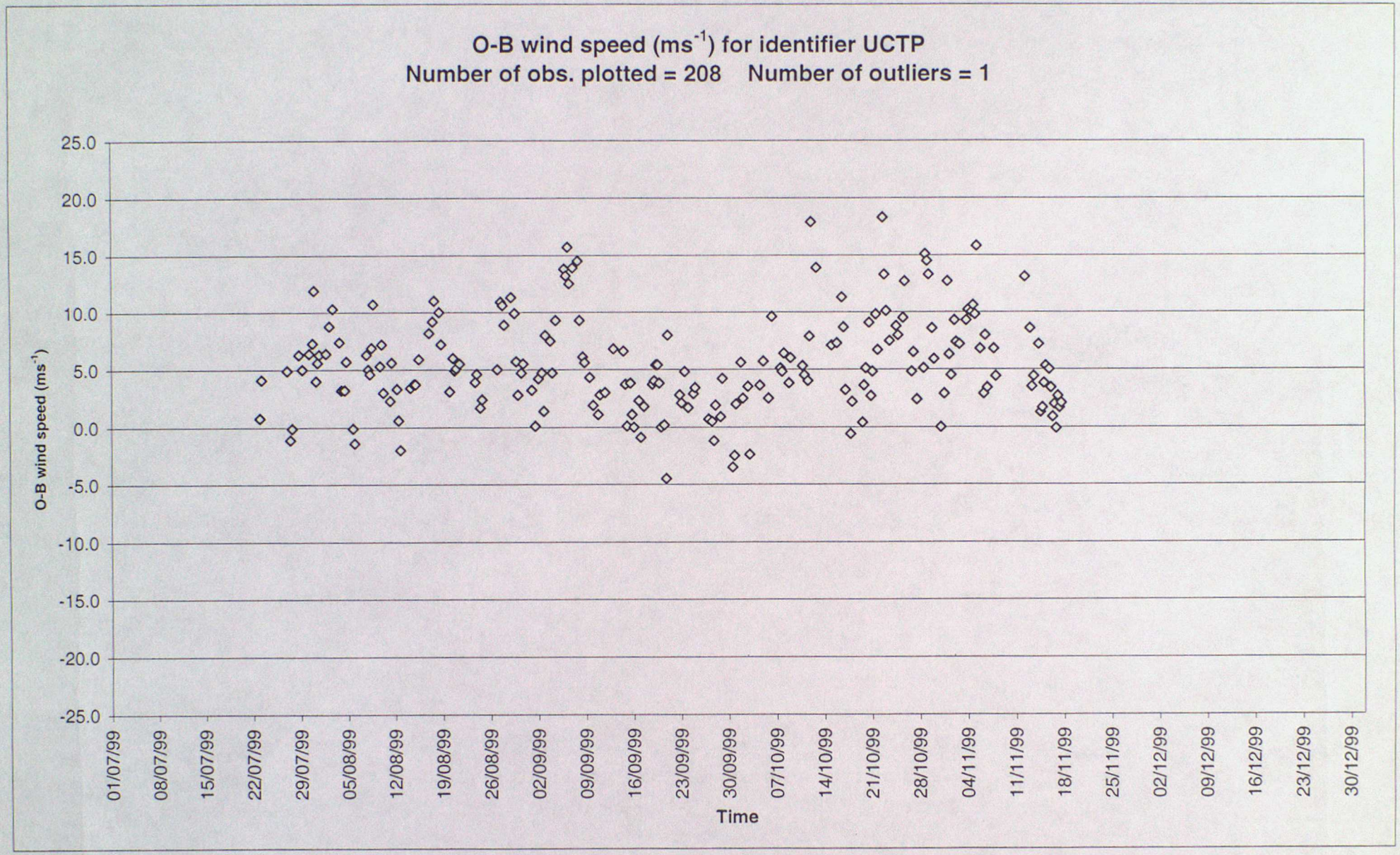

O-B wind speed (ms-1) for identifier PJVQ
Number of obs. plotted = 195 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

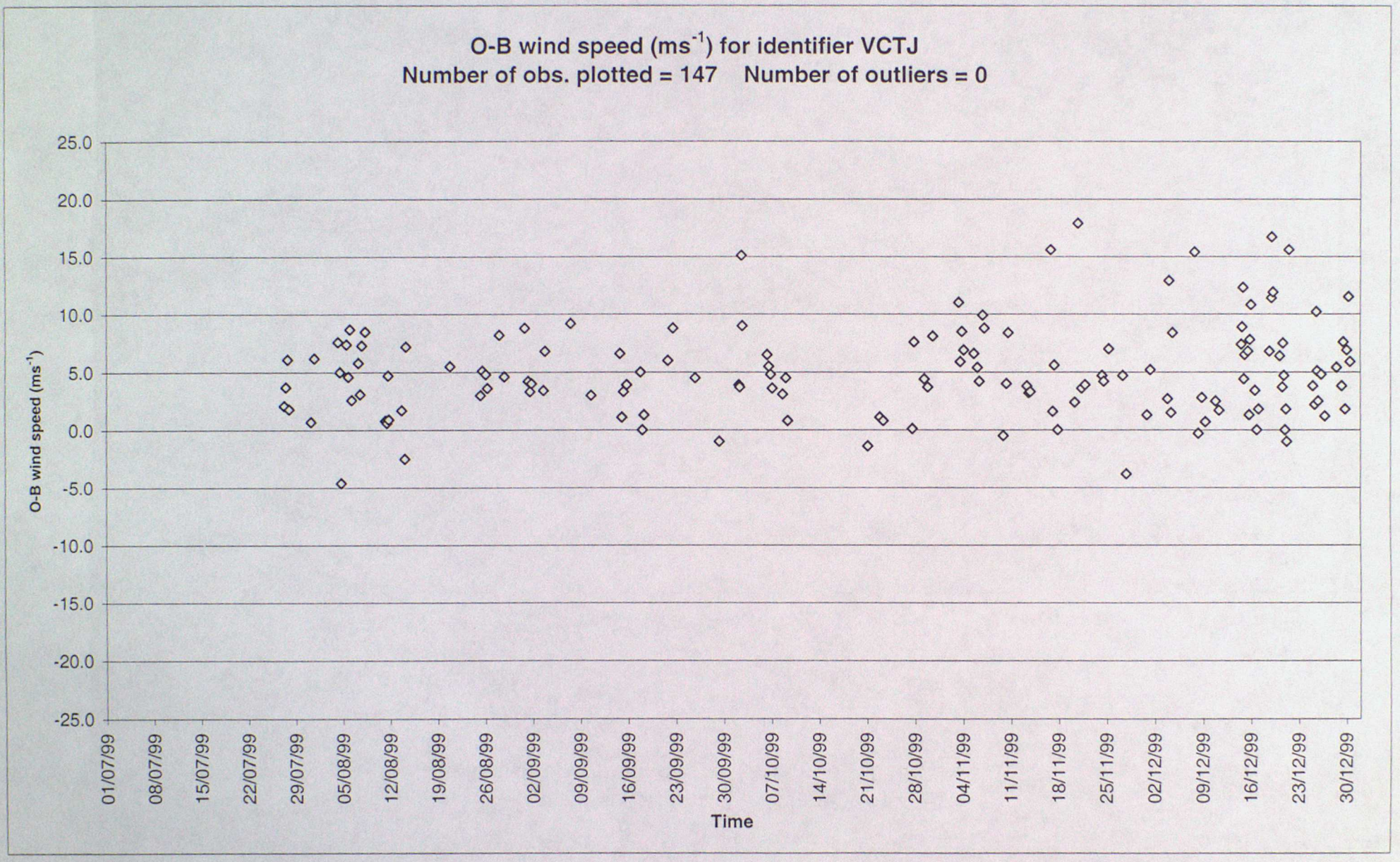

O-B wind speed (ms-1) for identifier SHIPAB
Number of obs. plotted = 63 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

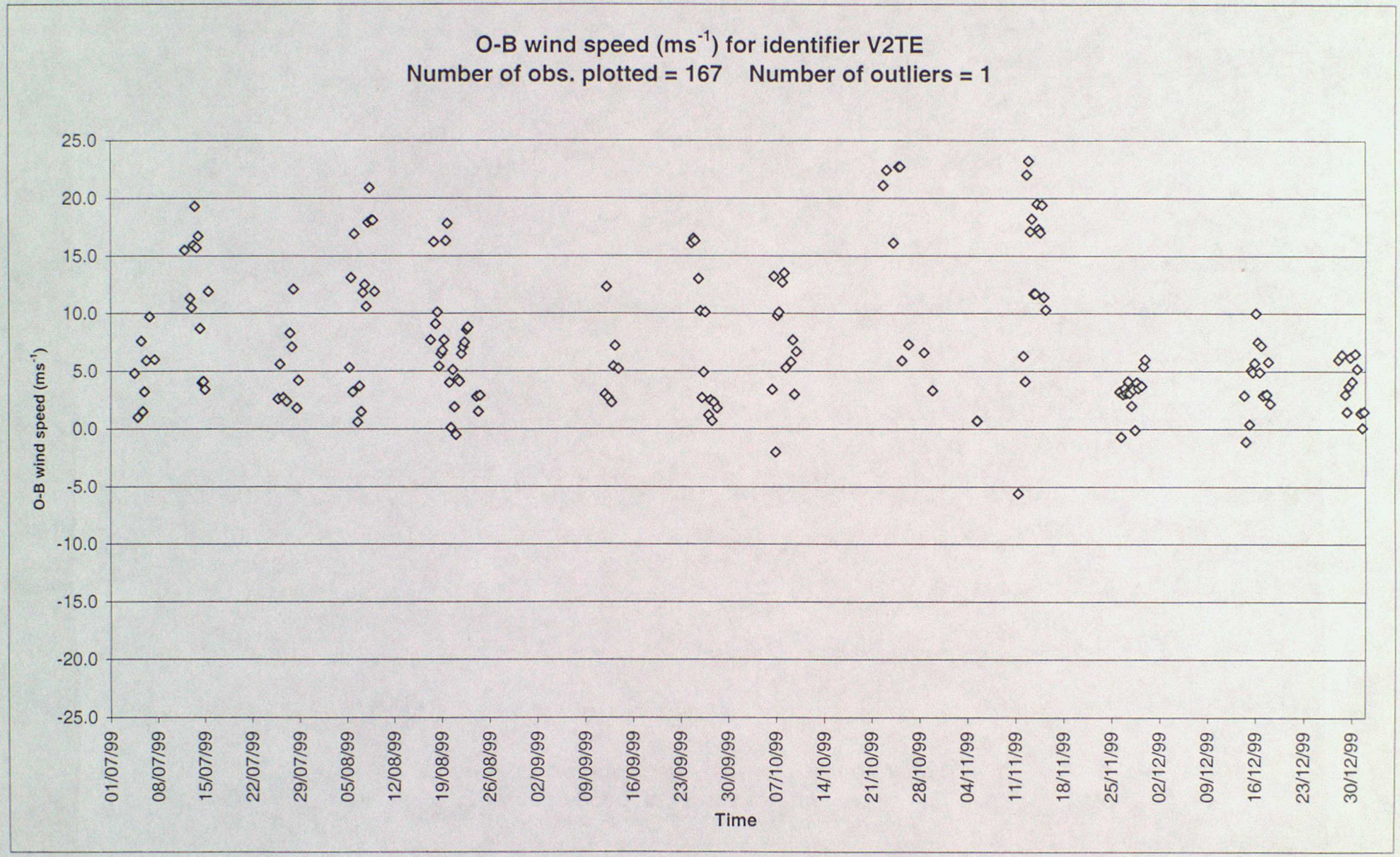

O-B wind speed (ms-1) for identifier SXYY
Number of obs. plotted = 200 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

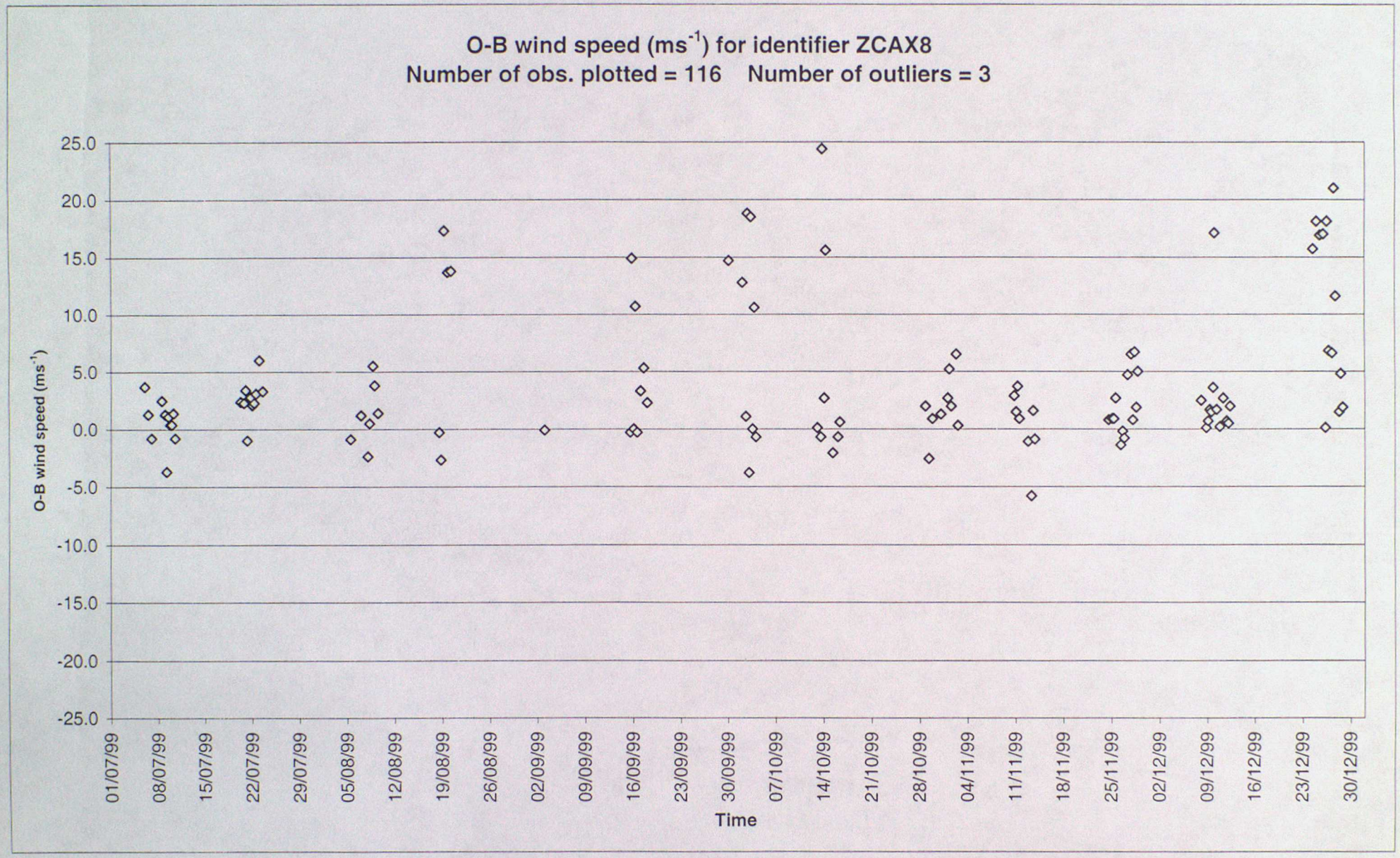

O-B wind speed (ms-1) for identifier TSMS
Number of obs. plotted = 472 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

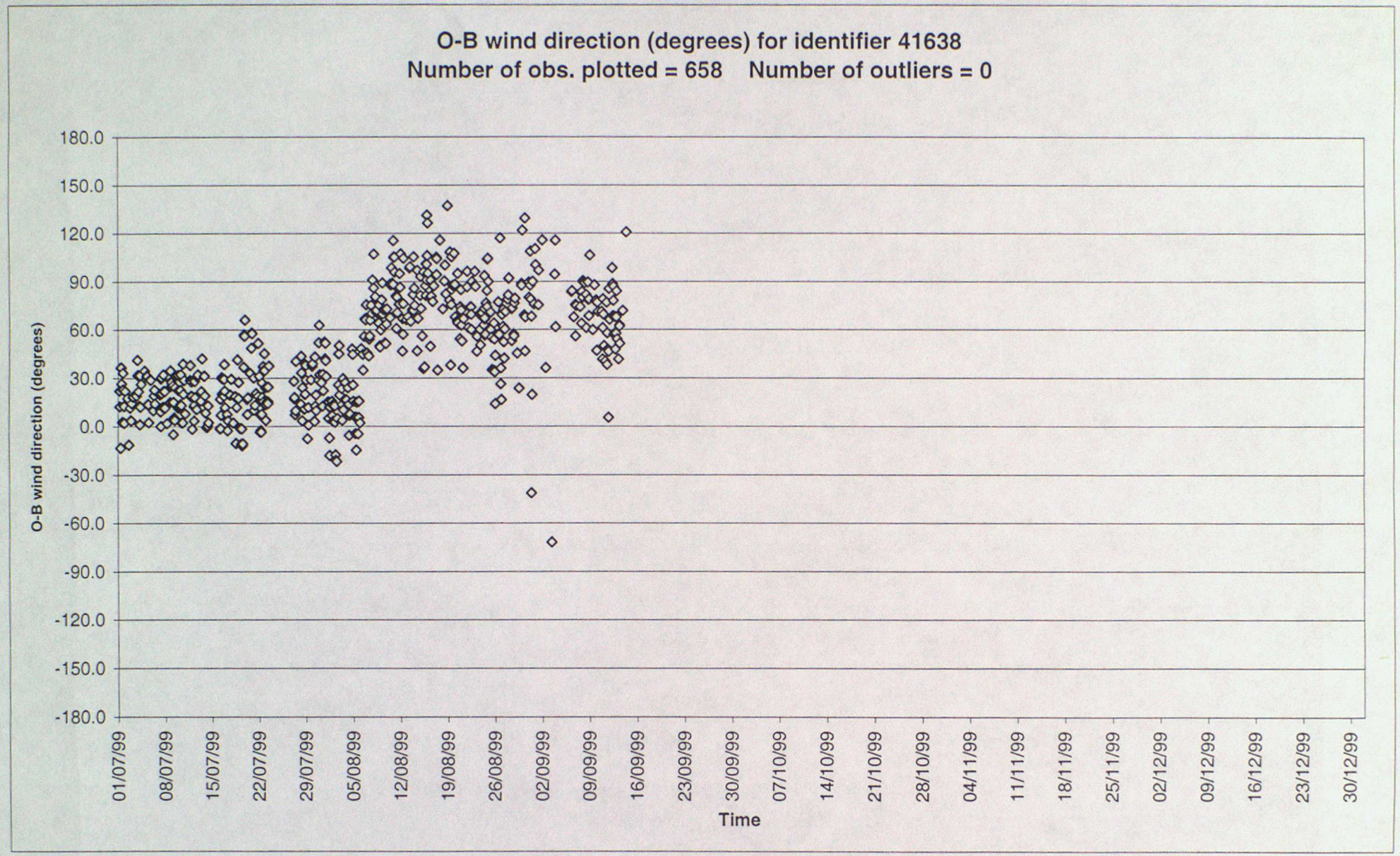

O-B wind speed (ms-1) for identifier TSMU
Number of obs. plotted = 394 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

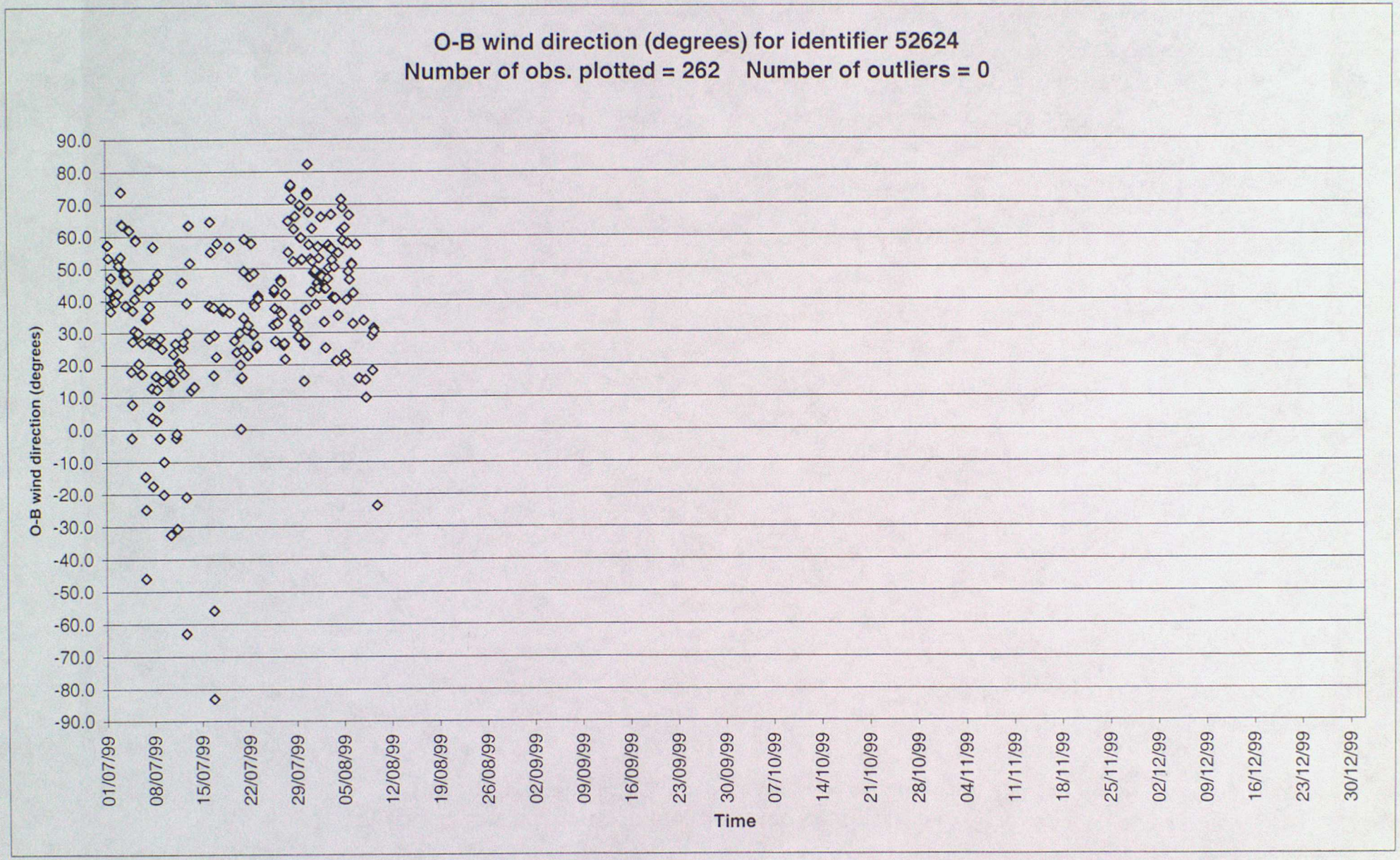

O-B wind speed (ms-1) for identifier UCTP
Number of obs. plotted = 208 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

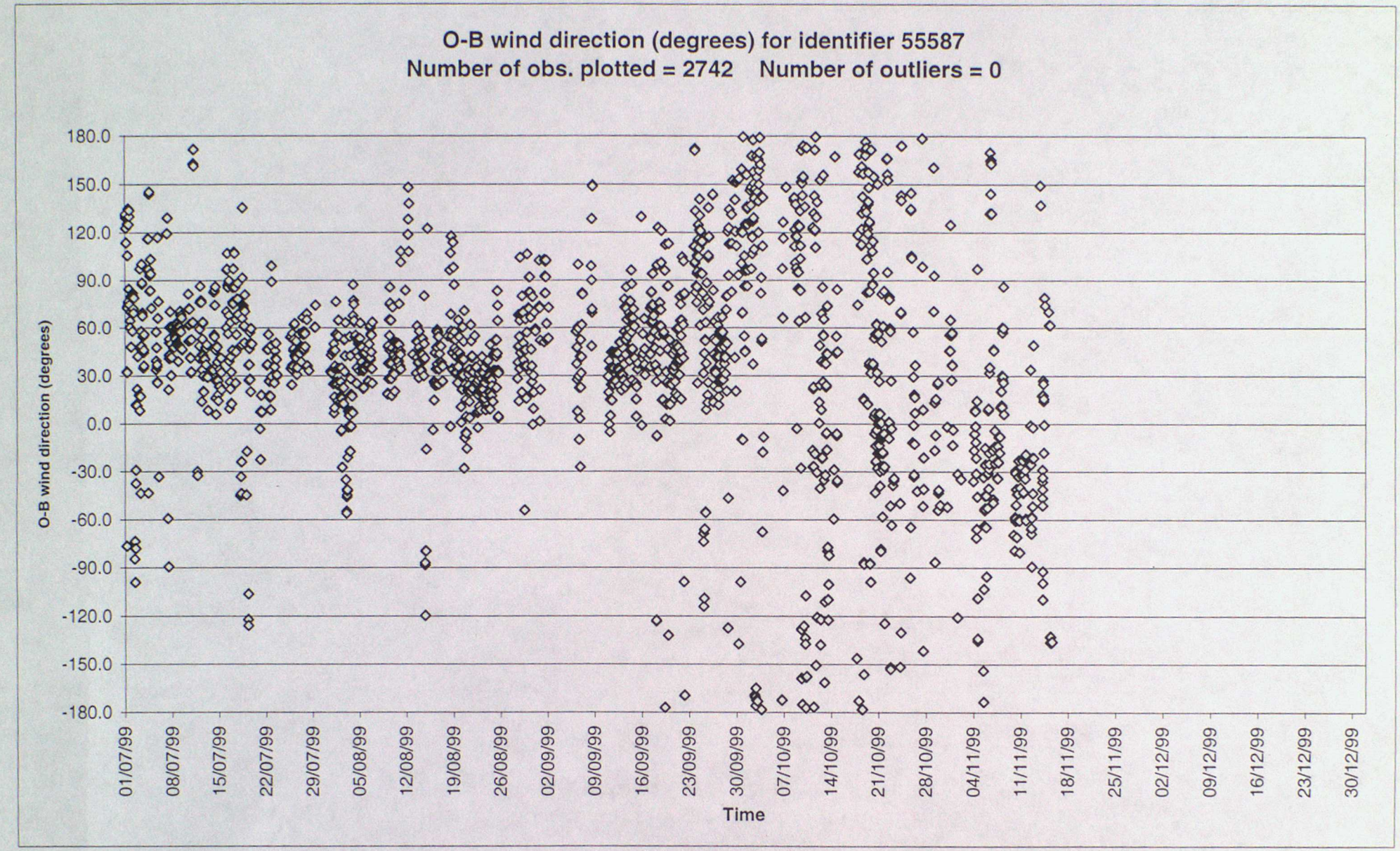

O-B wind speed (ms-1) for identifier VCTJ
Number of obs. plotted = 147 Number of outliers = 0
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

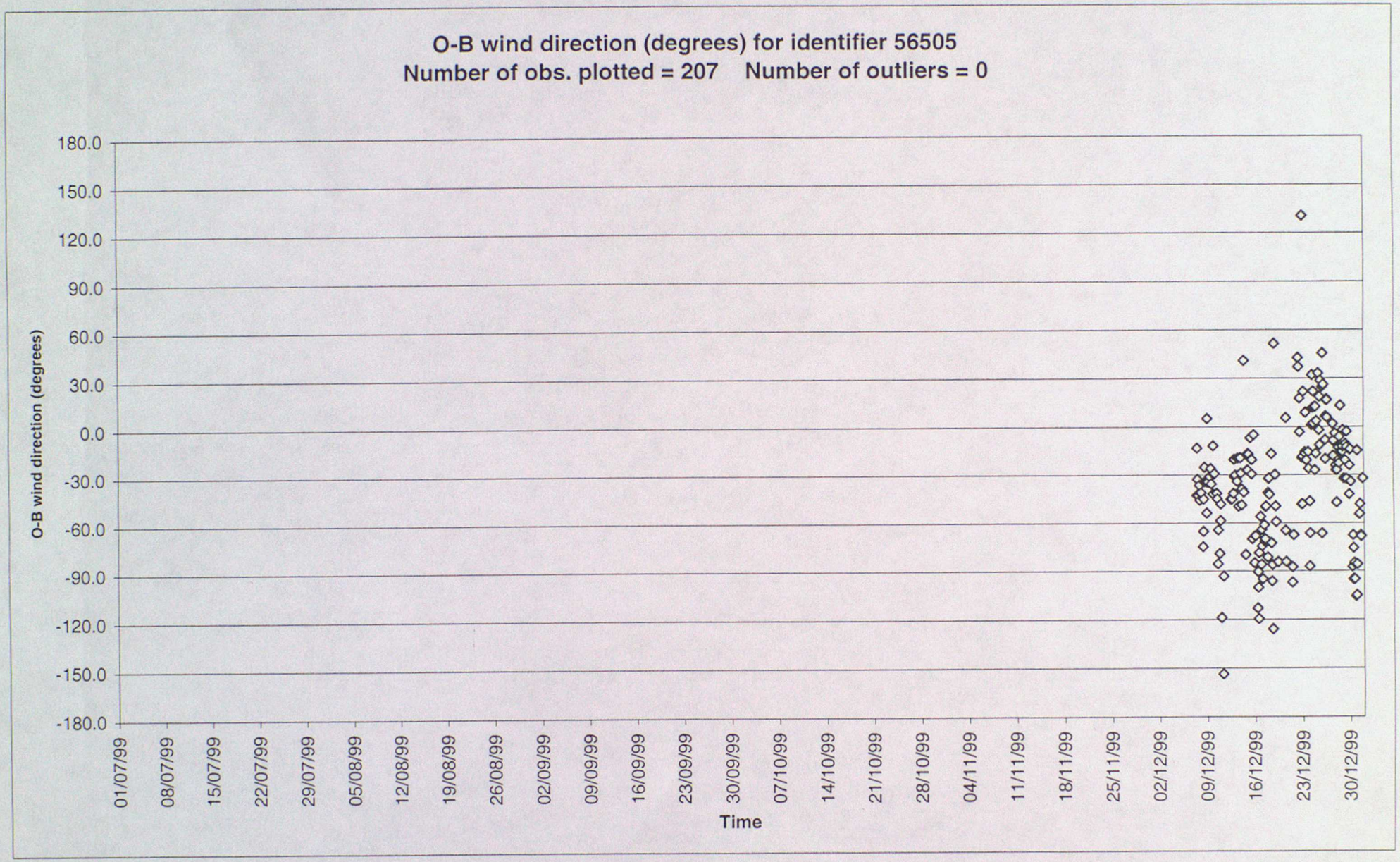

O-B wind speed (ms-1) for identifier V2TE
Number of obs. plotted = 167 Number of outliers = 1
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

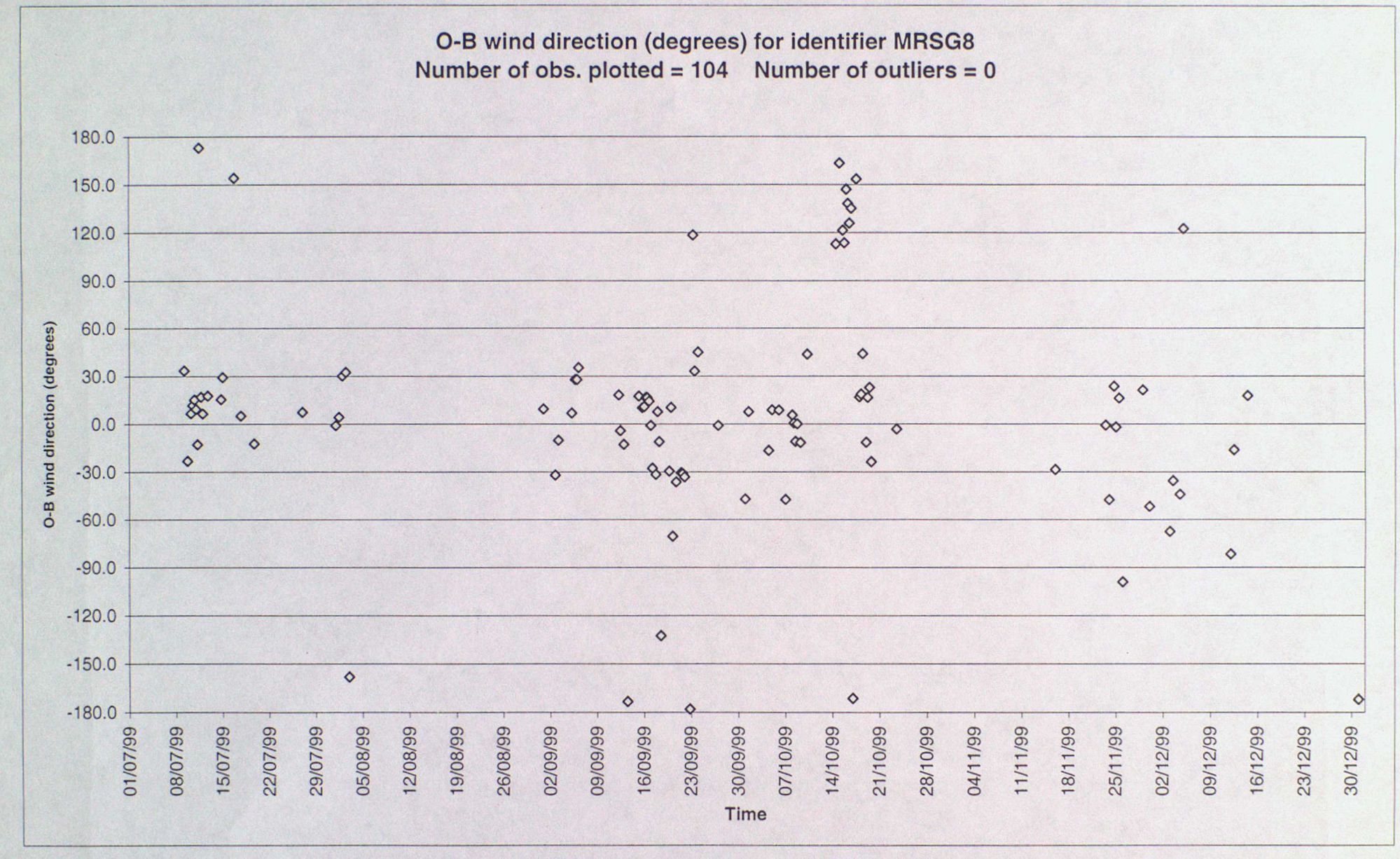

O-B wind speed (ms-1) for identifier ZCAX8
Number of obs. plotted = 116 Number of outliers = 3
O-B wind speed (ms-1)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

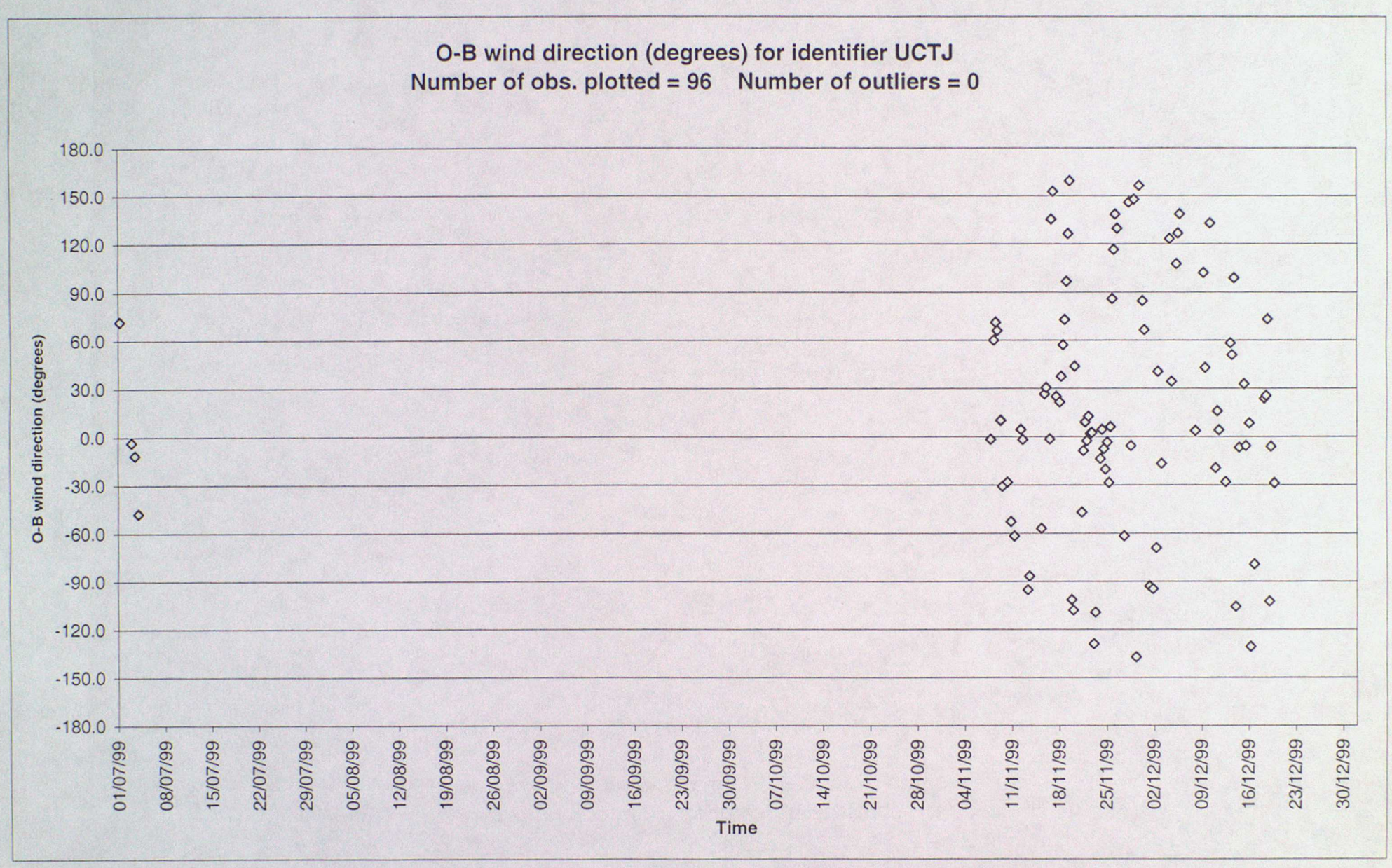

O-B wind direction (degrees) for identifier 41638
Number of obs. plotted = 658 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

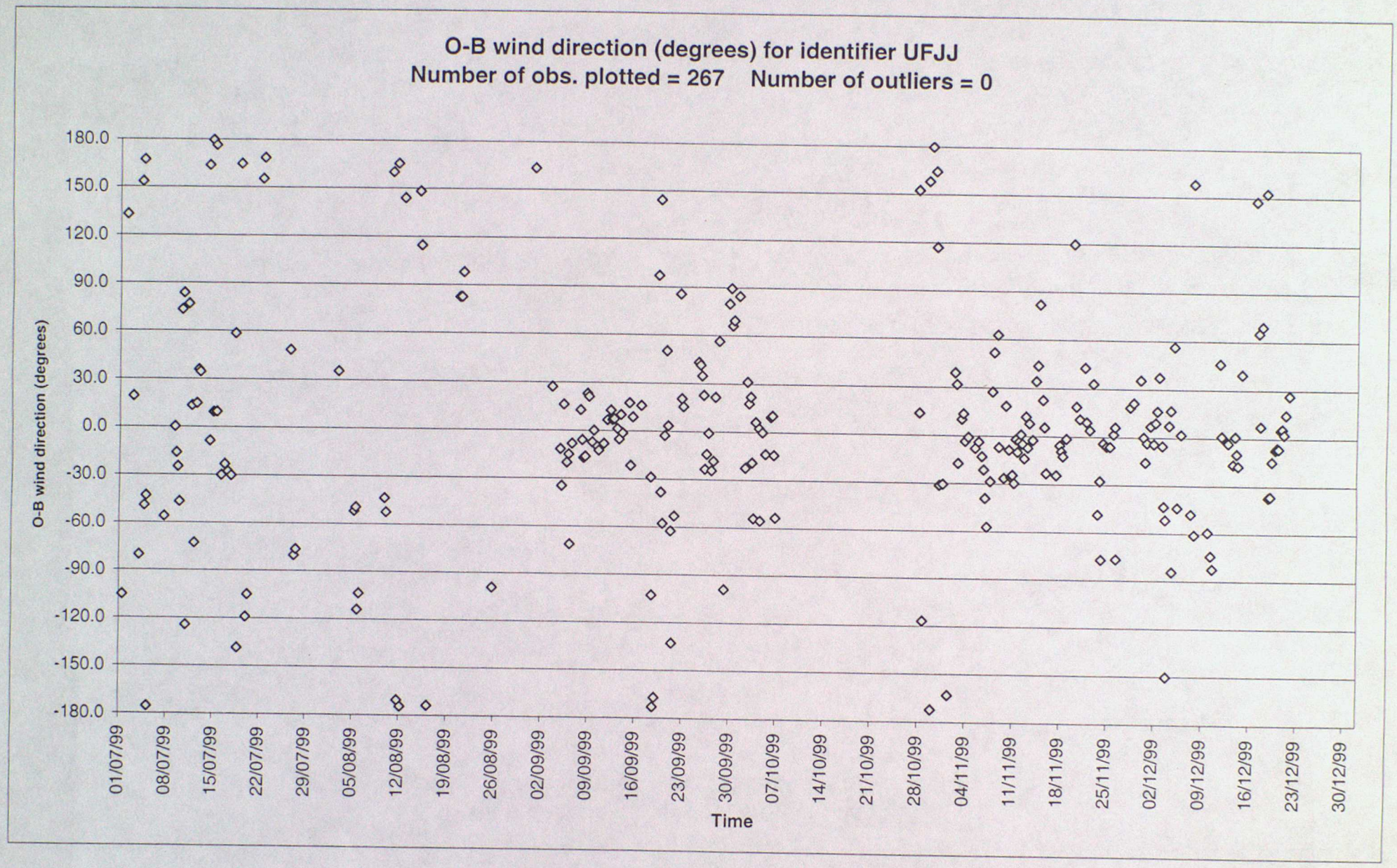

O-B wind direction (degrees) for identifier 52624
Number of obs. plotted = 262 Number of outliers = 0
O-B wind direction (degrees)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

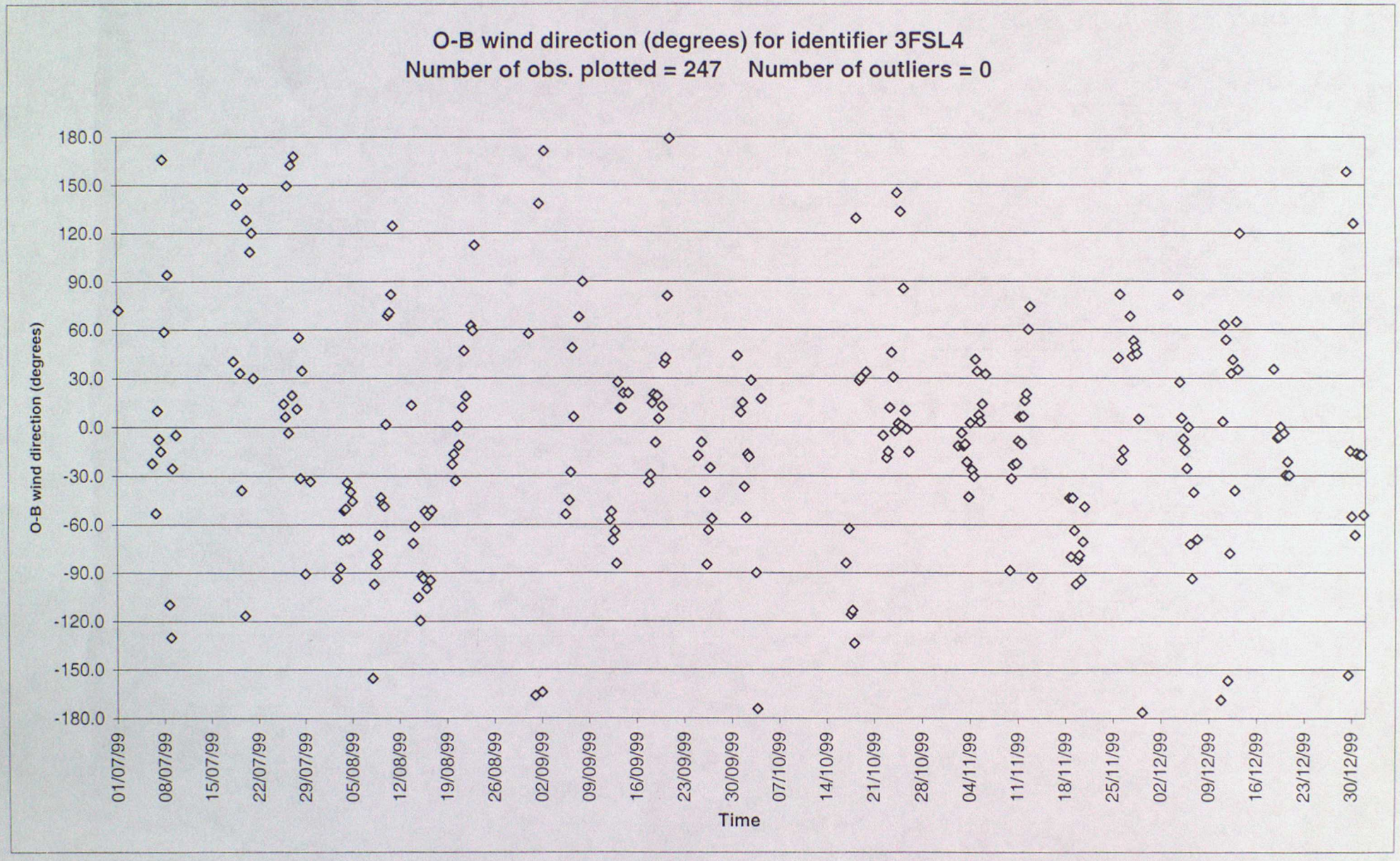

O-B wind direction (degrees) for identifier 55587
Number of obs. plotted = 2742 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

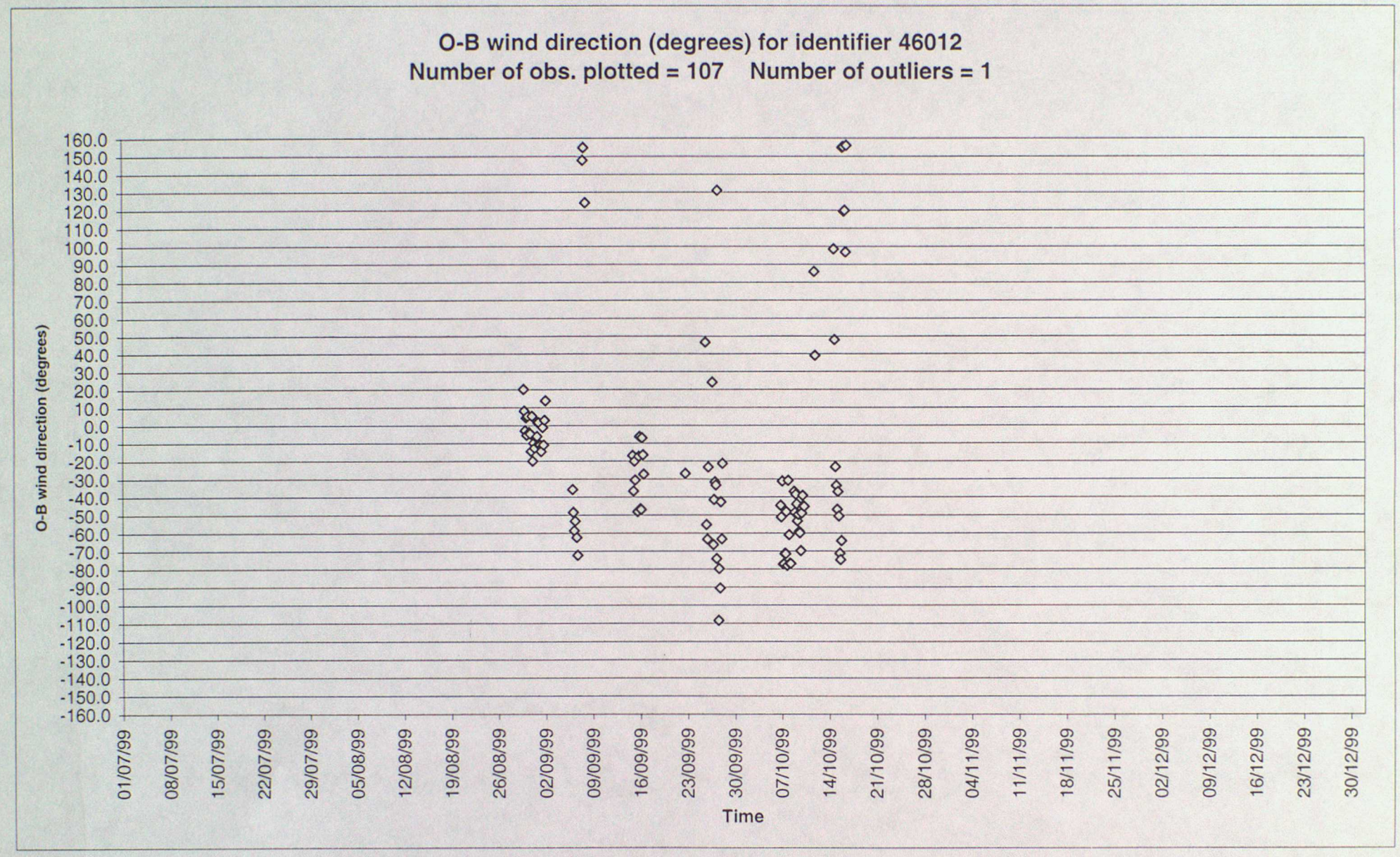

O-B wind direction (degrees) for identifier 56505
Number of obs. plotted = 207 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B wind direction (degrees) for identifier MRSG8
Number of obs. plotted = 104 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

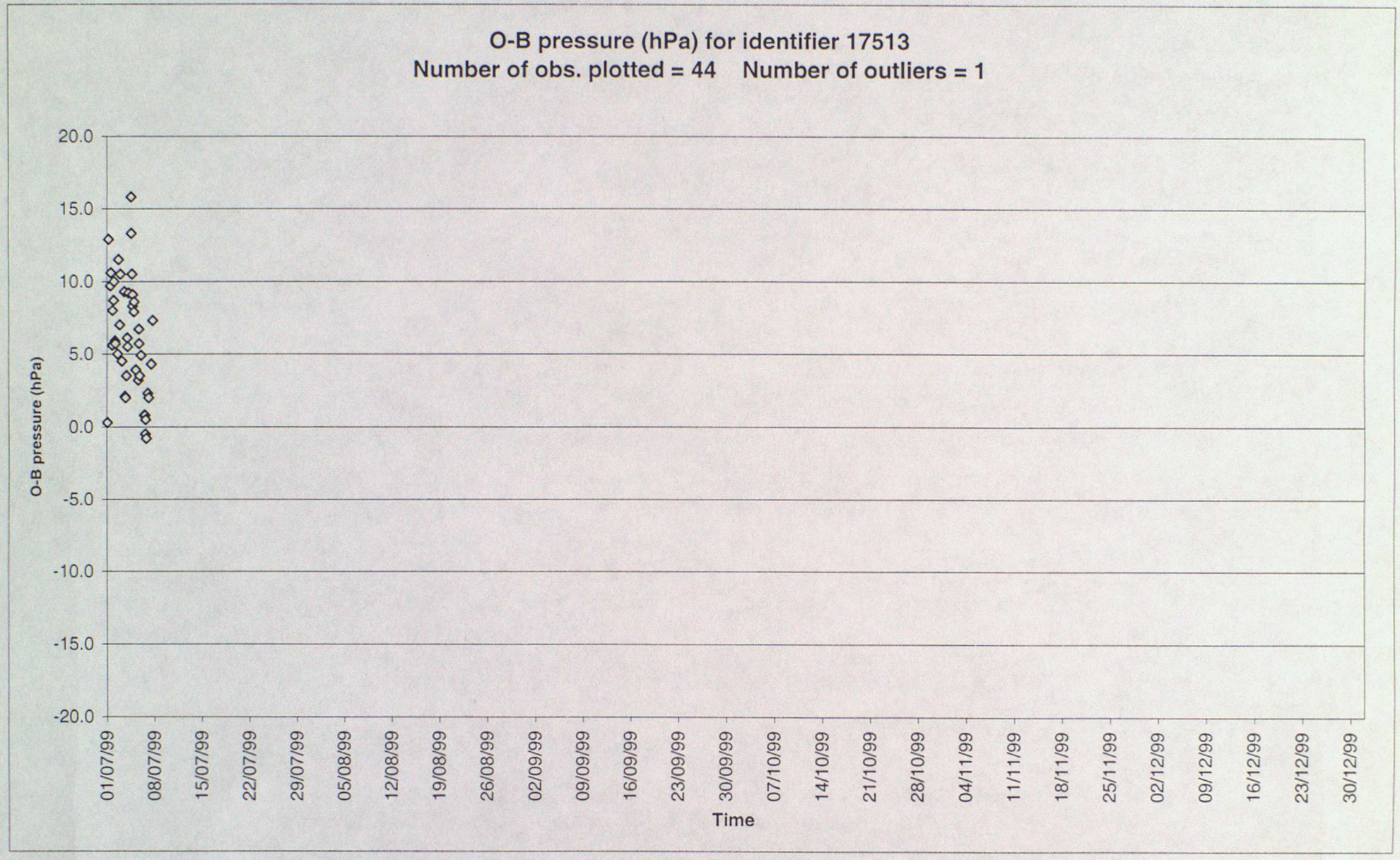

O-B wind direction (degrees) for identifier UCTJ
Number of obs. plotted = 96 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B wind direction (degrees) for identifier UFJJ
Number of obs. plotted = 267 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

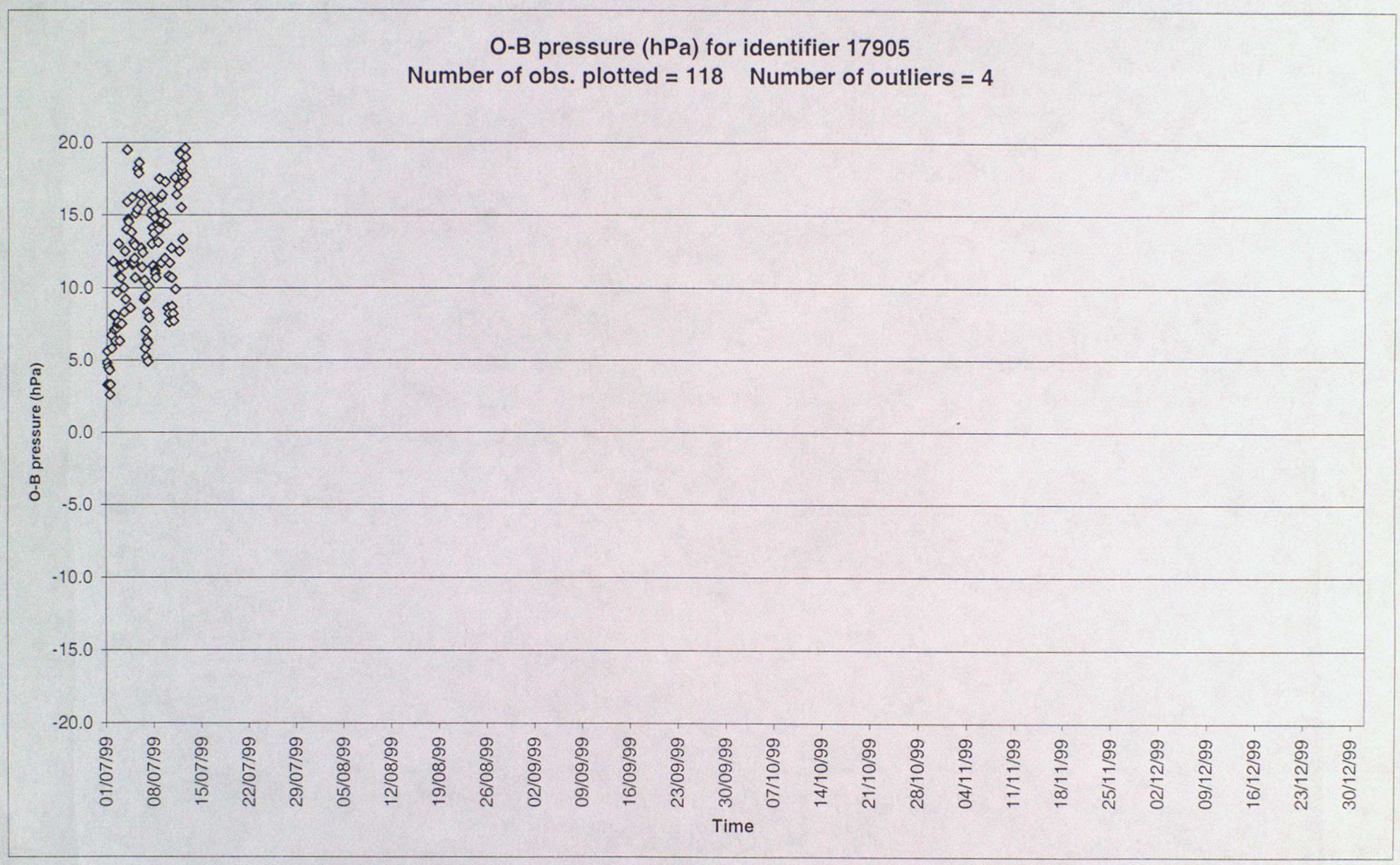

O-B wind direction (degrees) for identifier 3FSL4
Number of obs. plotted = 247 Number of outliers = 0
O-B wind direction (degrees)
180.0
150.0
120.0
90.0
60.0
30.0
0.0
-30.0
-60.0
-90.0
-120.0
-150.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

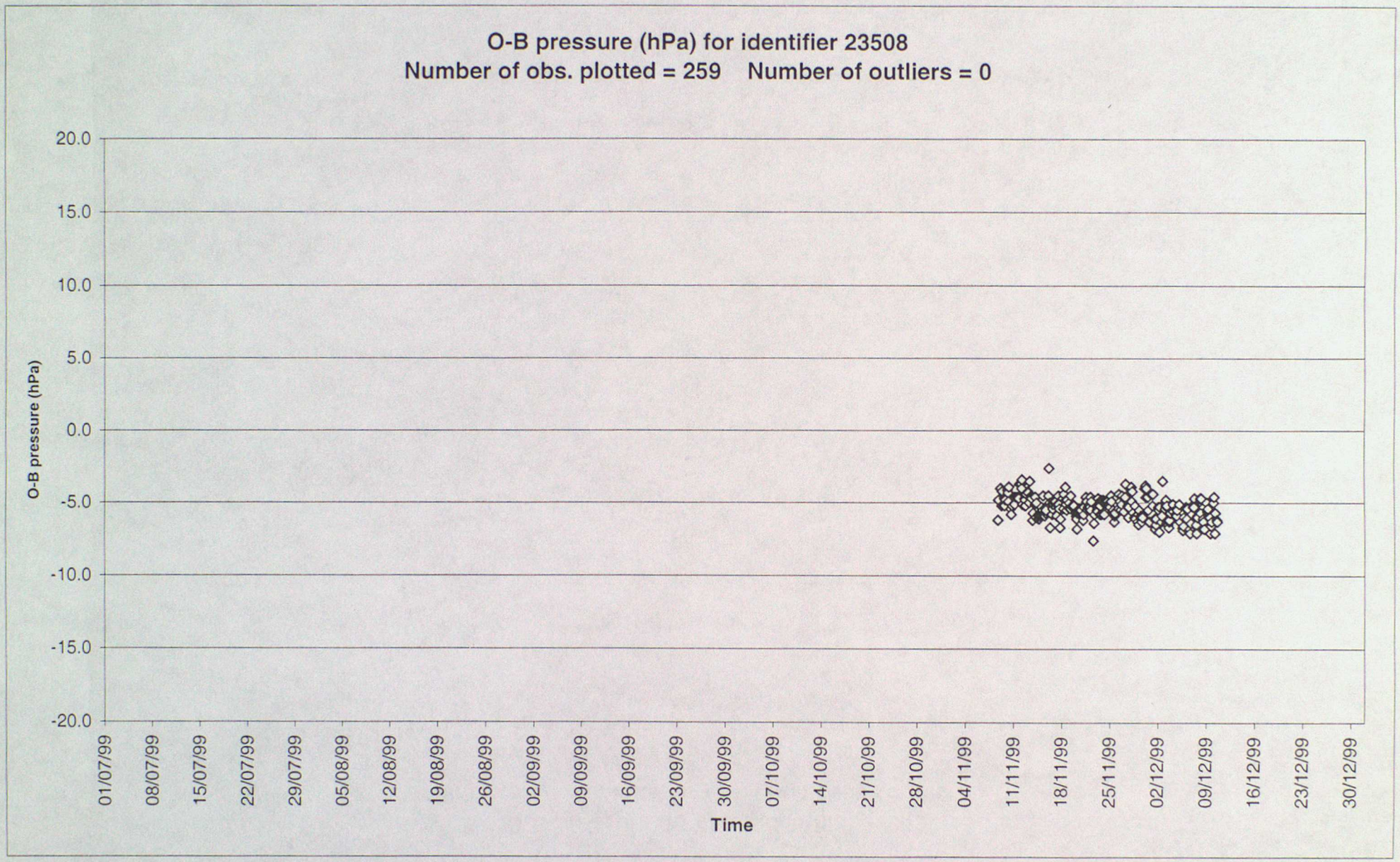

O-B wind direction (degrees) for identifier 46012
Number of obs. plotted = 107 Number of outliers = 1
O-B wind direction (degrees)
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

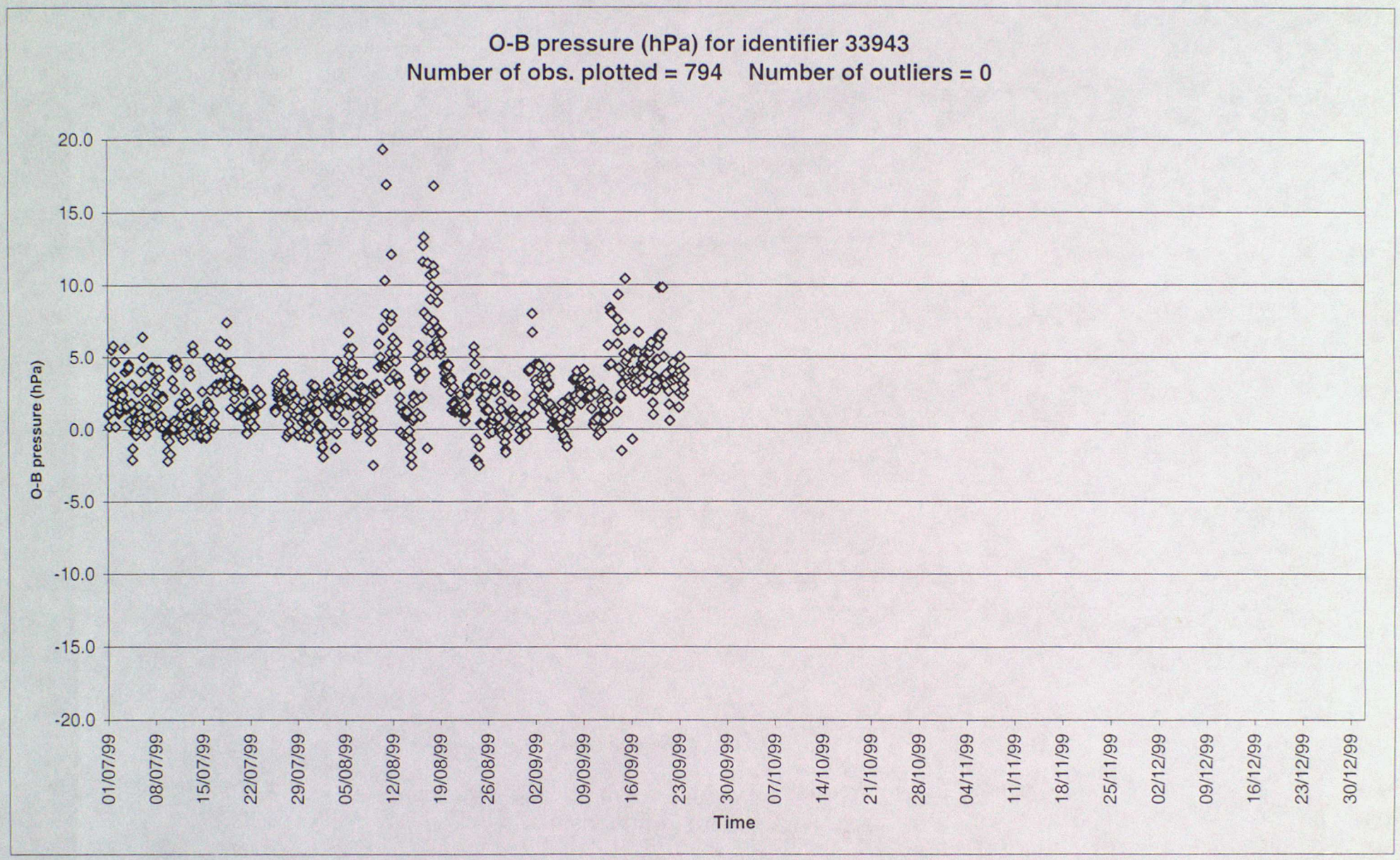
O-B pressure (hPa) for identifier 14914
Number of obs. plotted = 188 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Time
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99

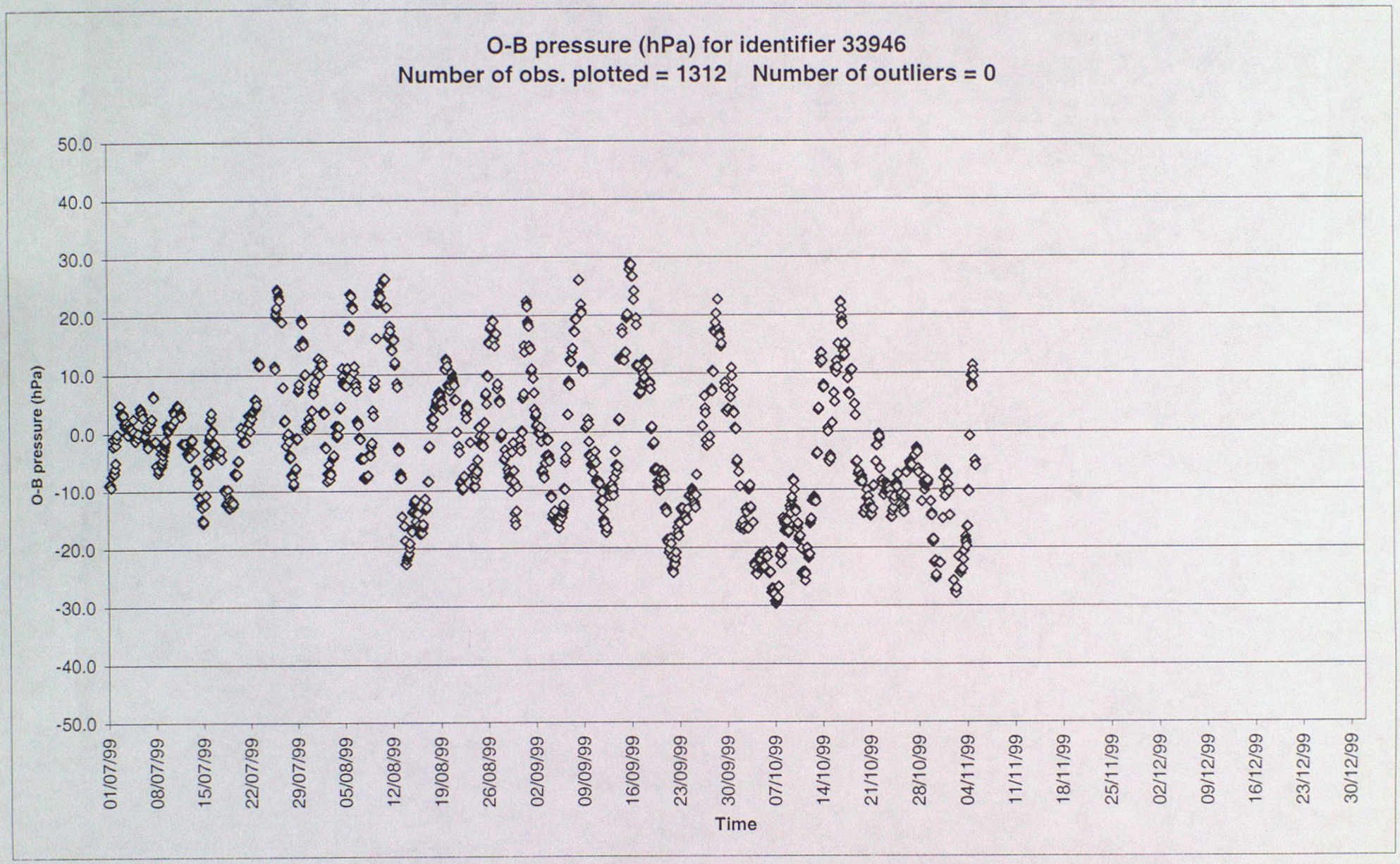

O-B pressure (hPa) for identifier 17513
Number of obs. plotted = 44 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

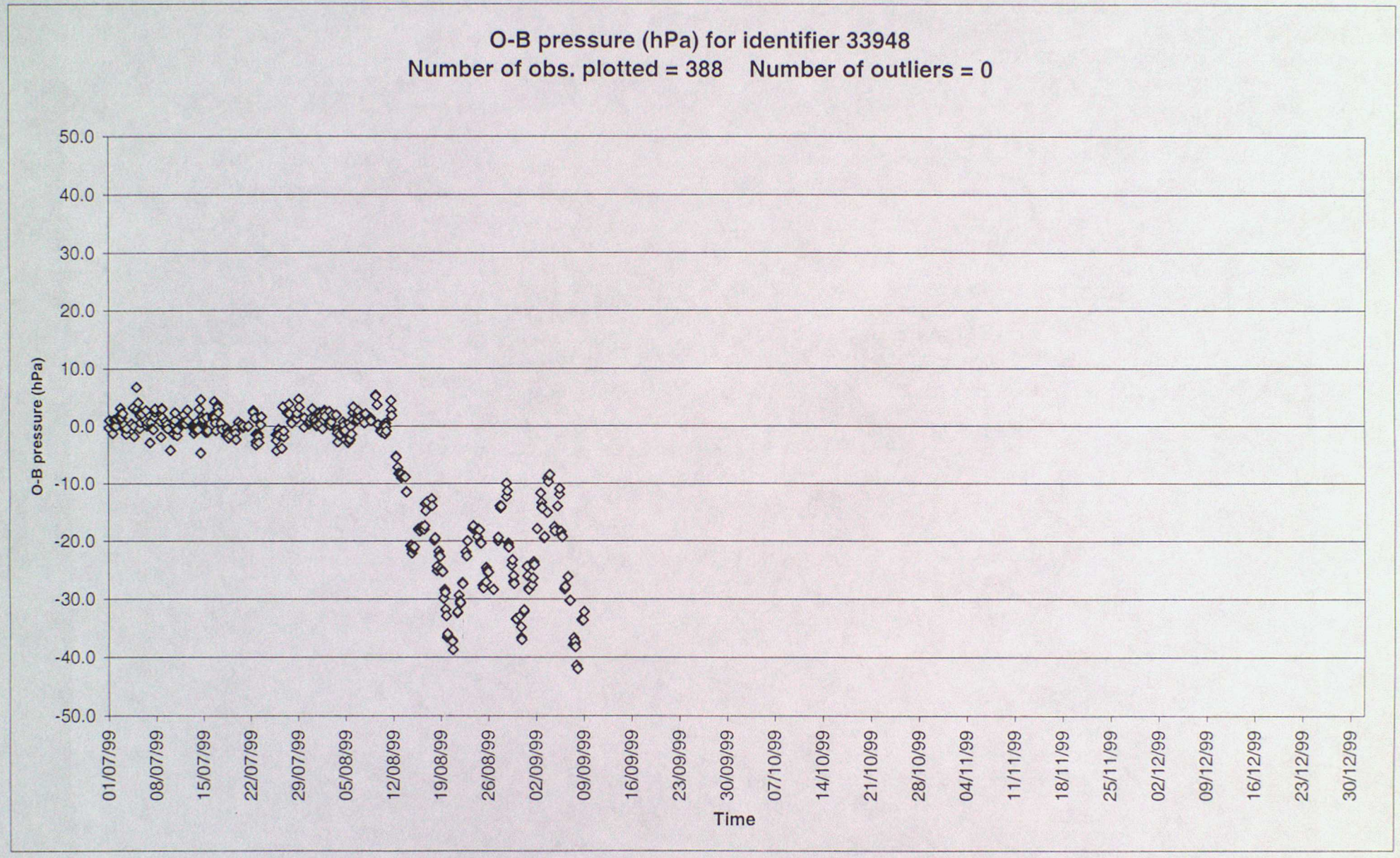
O-B pressure (hPa) for identifier 17904
Number of obs. plotted = 57 Number of outliers = 2
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Time
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99

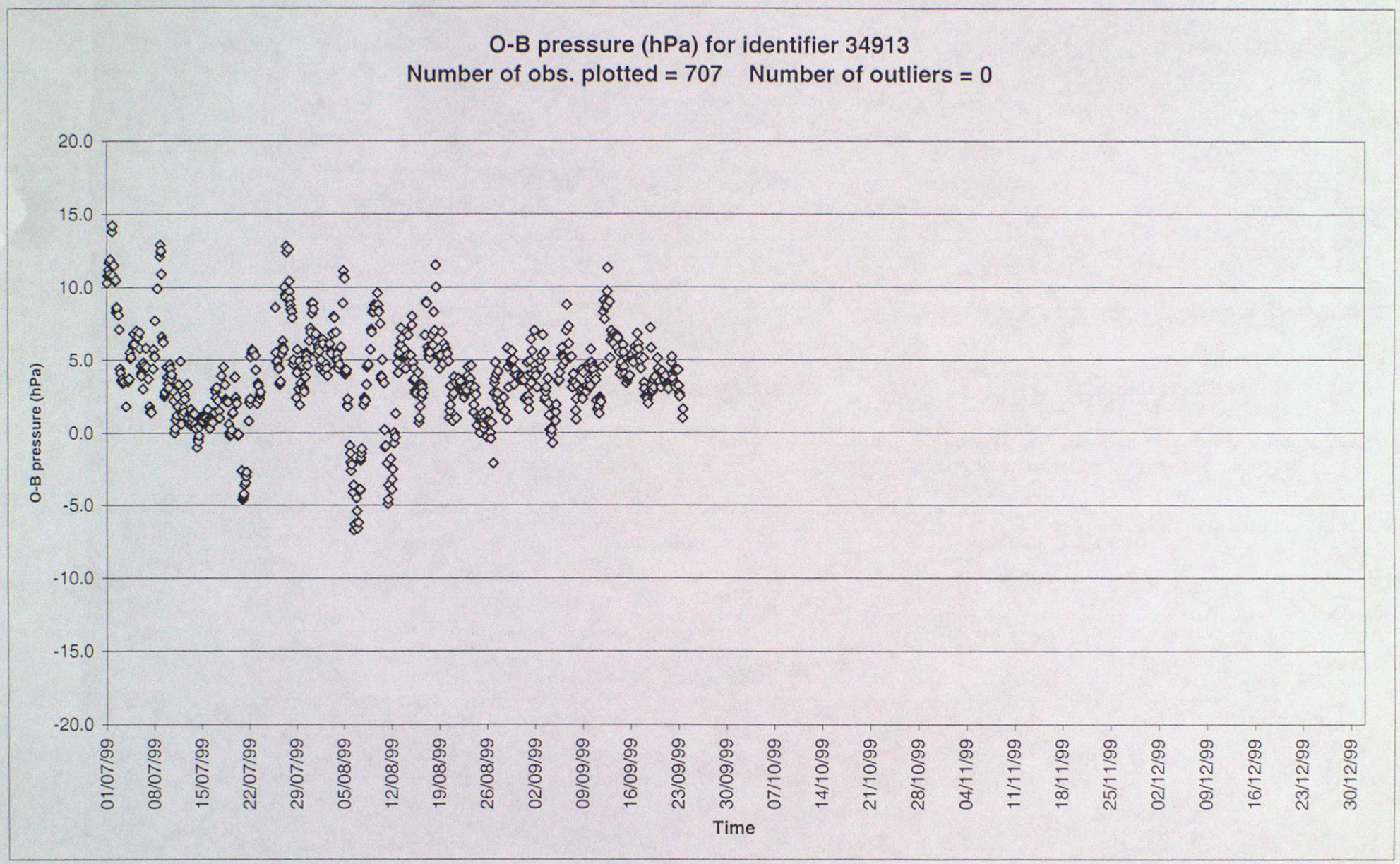

O-B pressure (hPa) for identifier 17905
Number of obs. plotted = 118 Number of outliers = 4
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

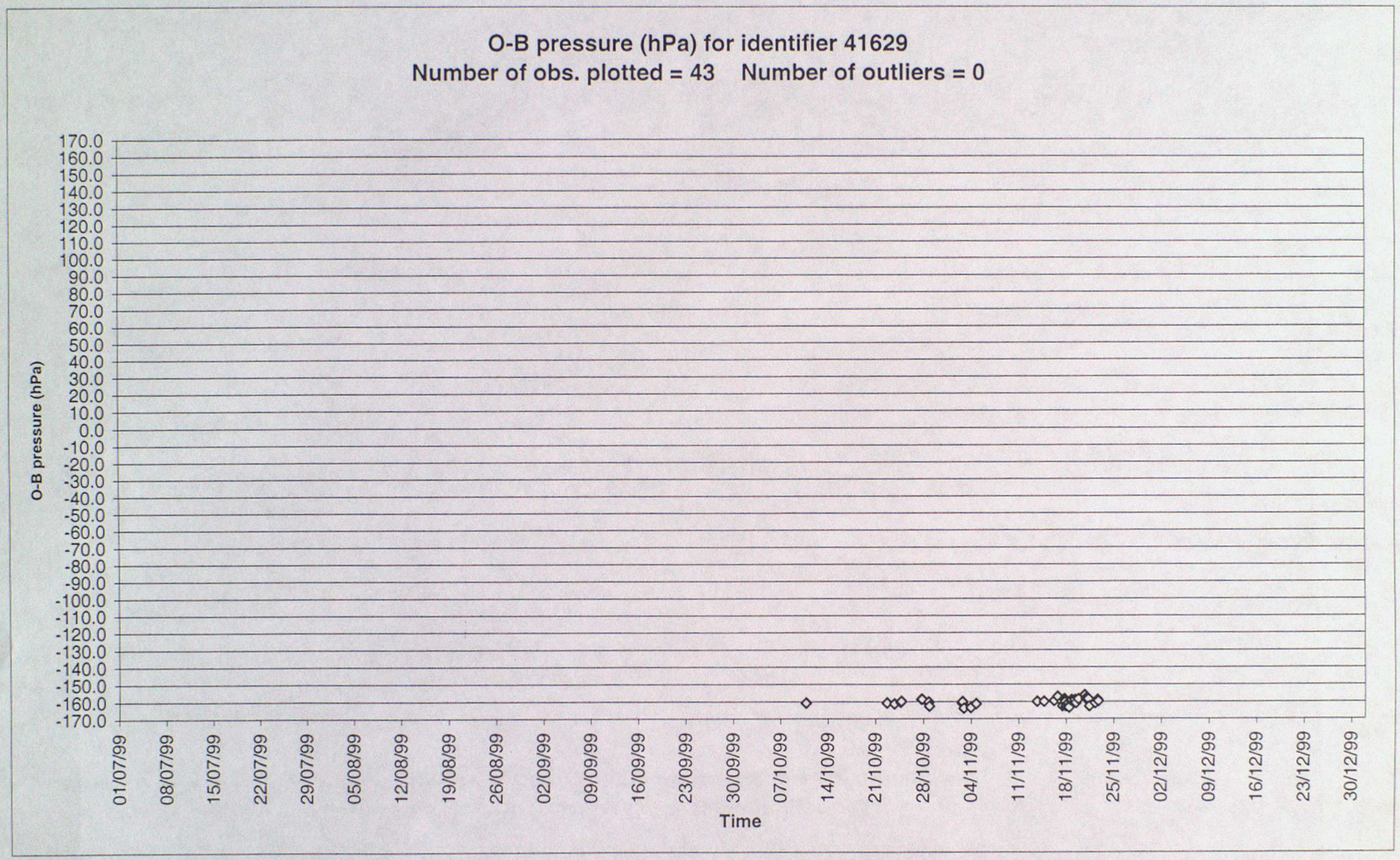

O-B pressure (hPa) for identifier 23508
Number of obs. plotted = 259 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

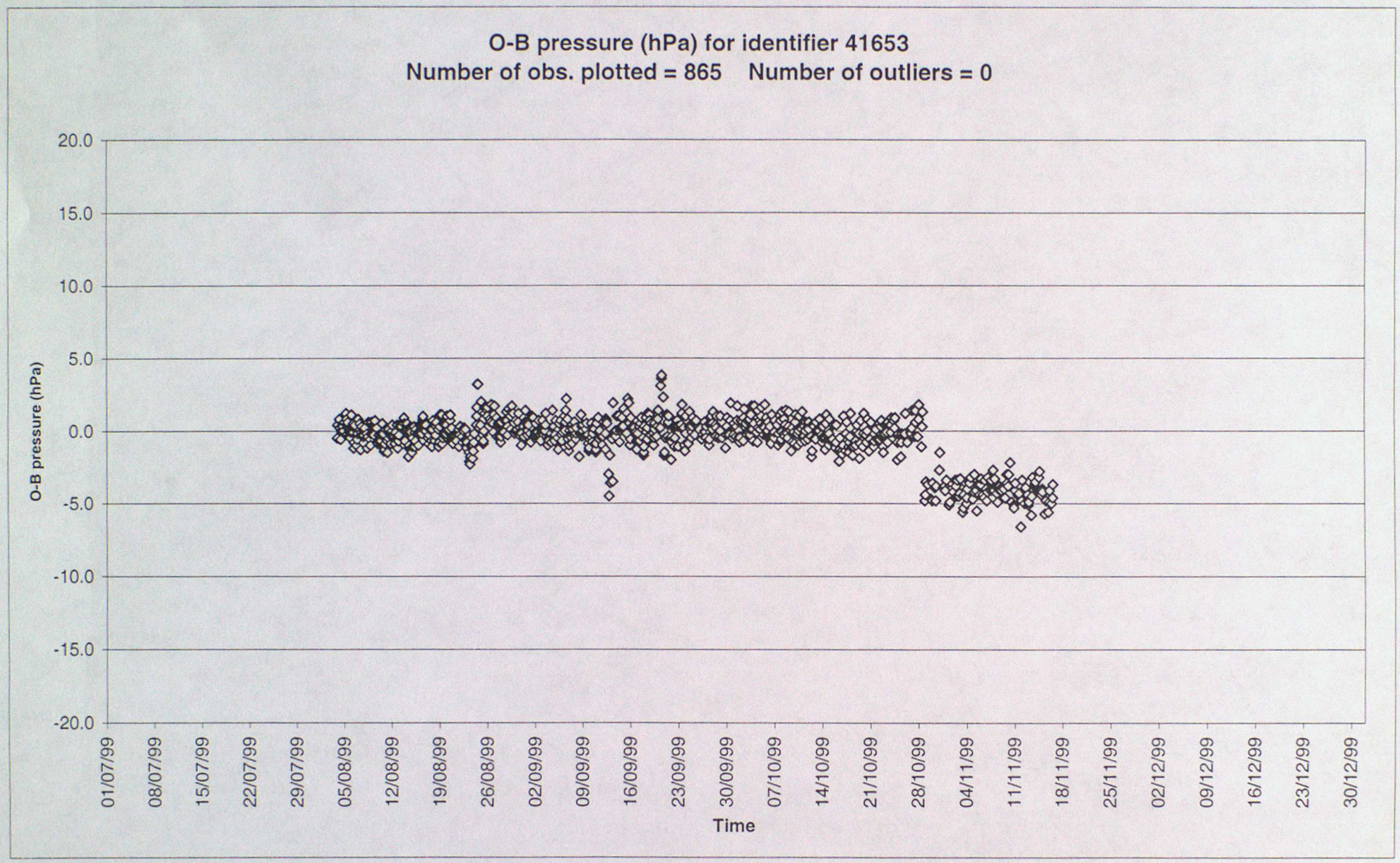

O-B pressure (hPa) for identifier 33943
Number of obs. plotted = 794 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

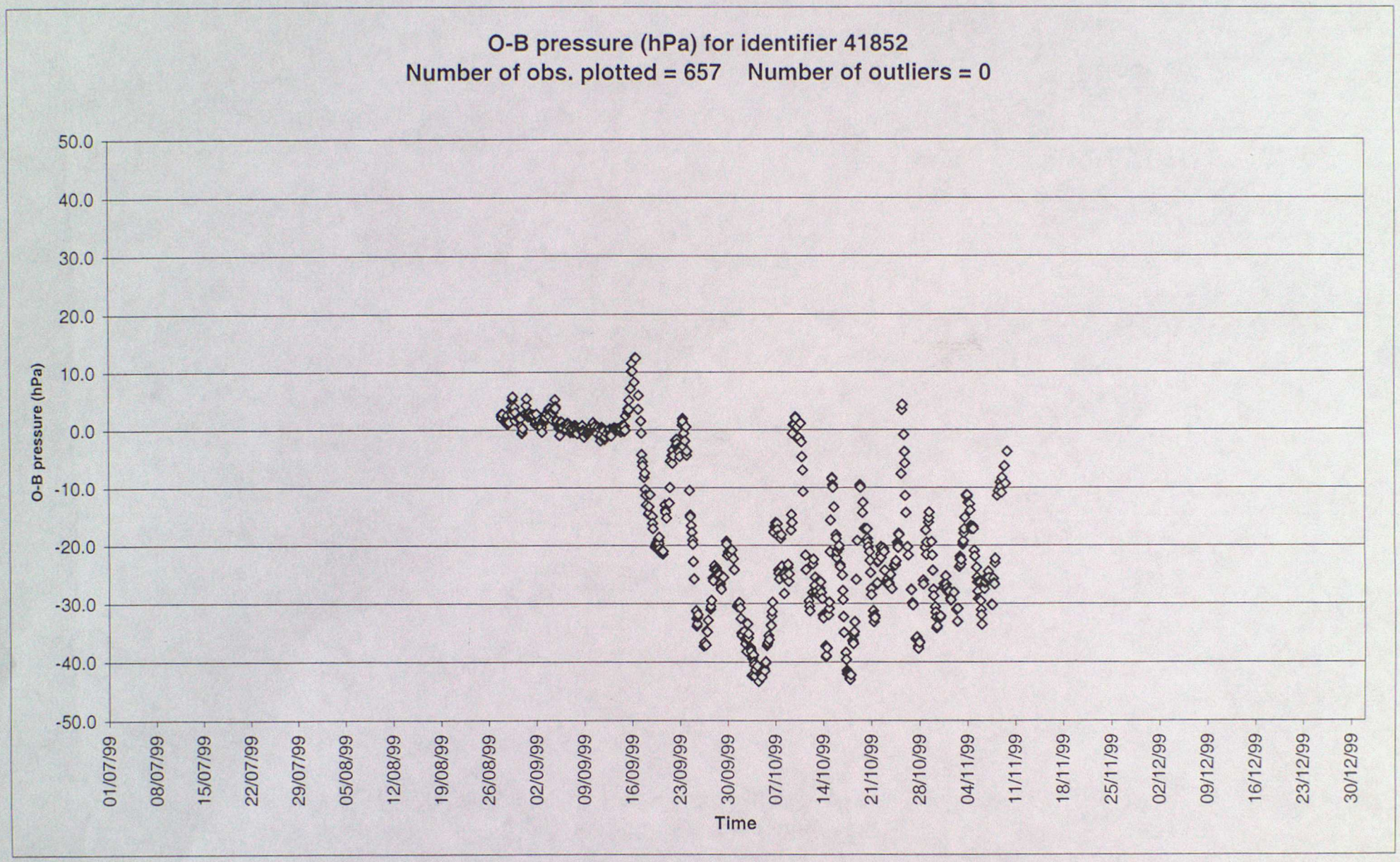

O-B pressure (hPa) for identifier 33946
Number of obs. plotted = 1312 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

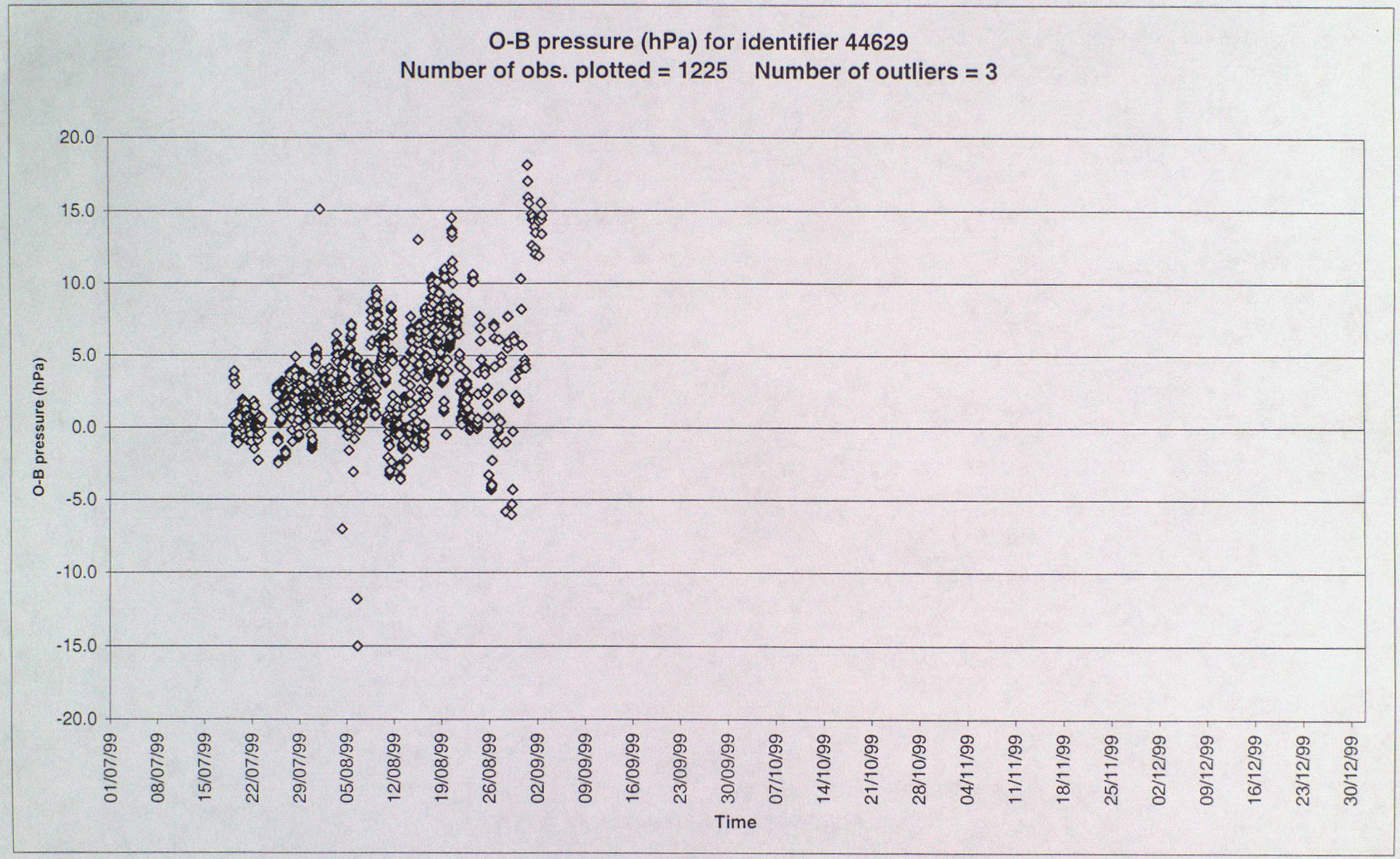

O-B pressure (hPa) for identifier 33948
Number of obs. plotted = 388 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

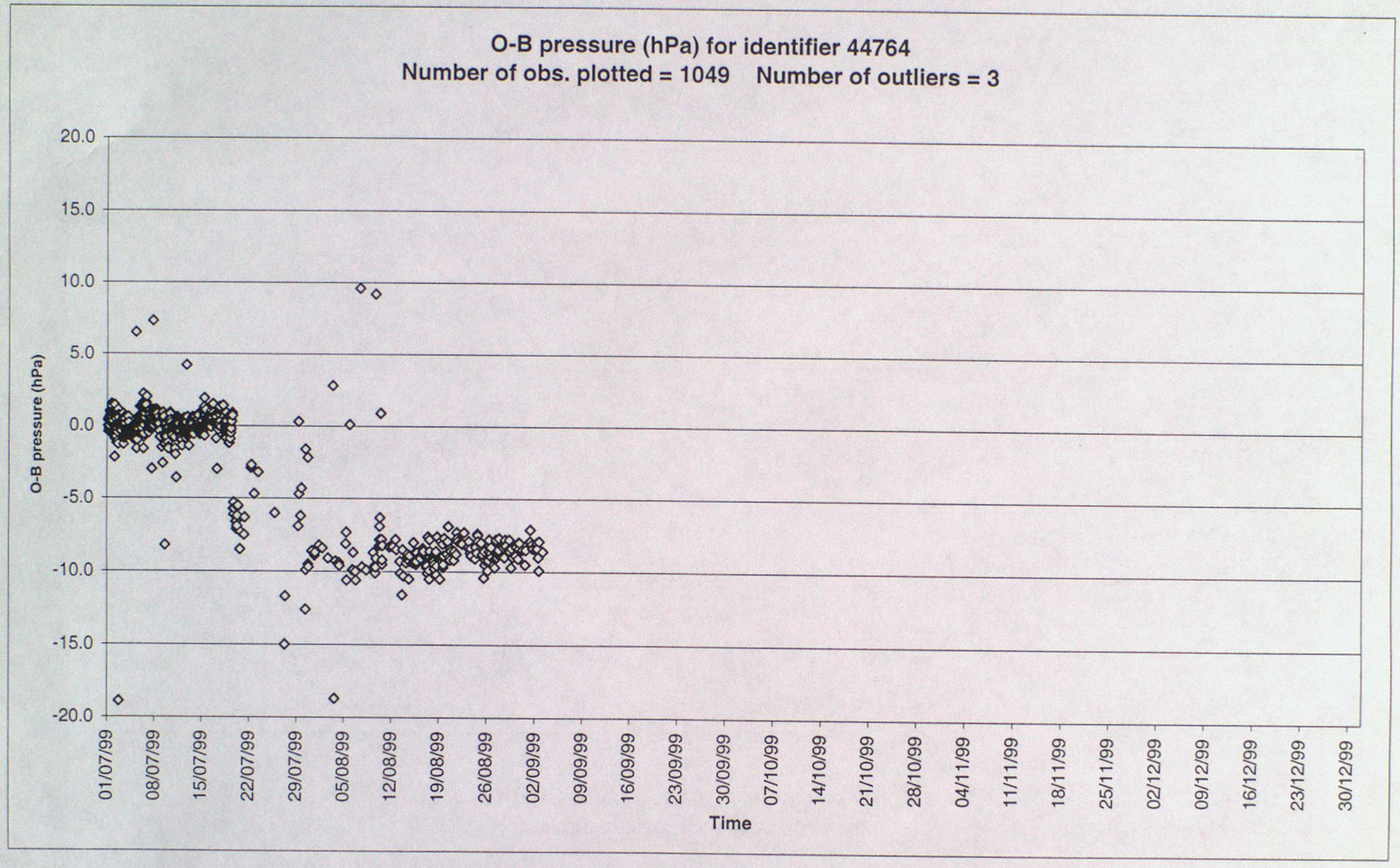

O-B pressure (hPa) for identifier 34913
Number of obs. plotted = 707 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

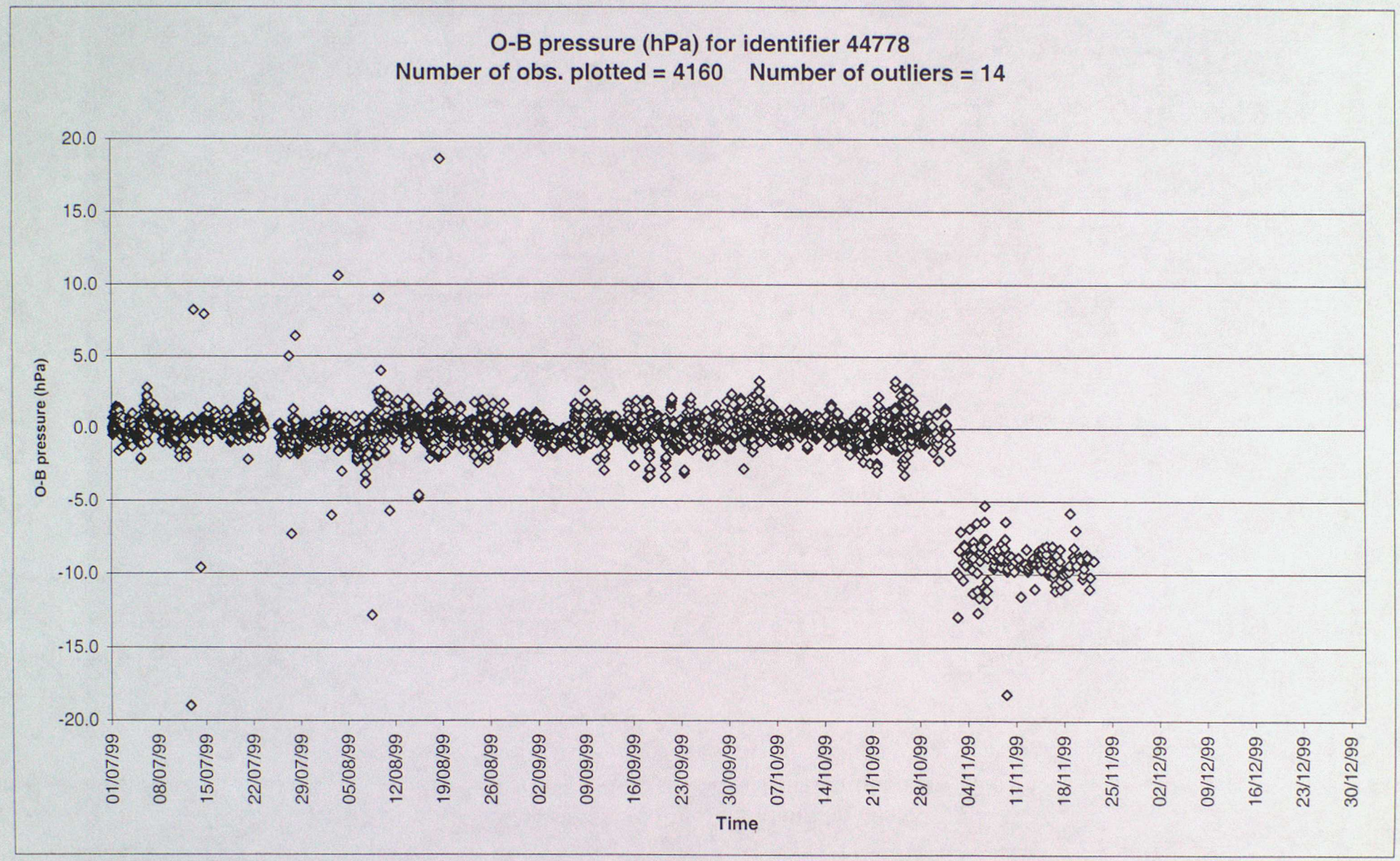

O-B pressure (hPa) for identifier 41629
Number of obs. plotted = 43 Number of outliers = 0
O-B pressure (hPa)
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

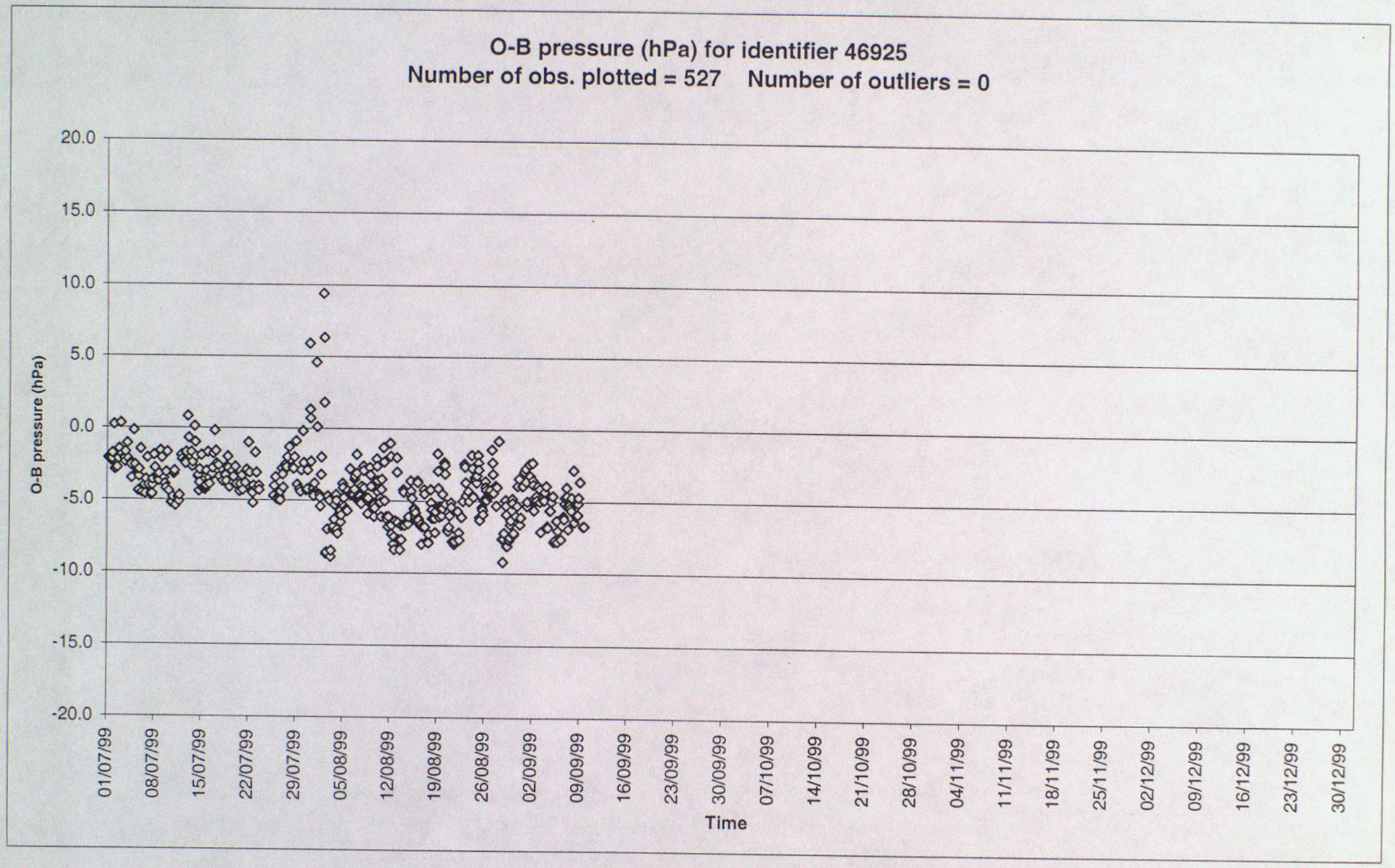

O-B pressure (hPa) for identifier 41653
Number of obs. plotted = 865 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

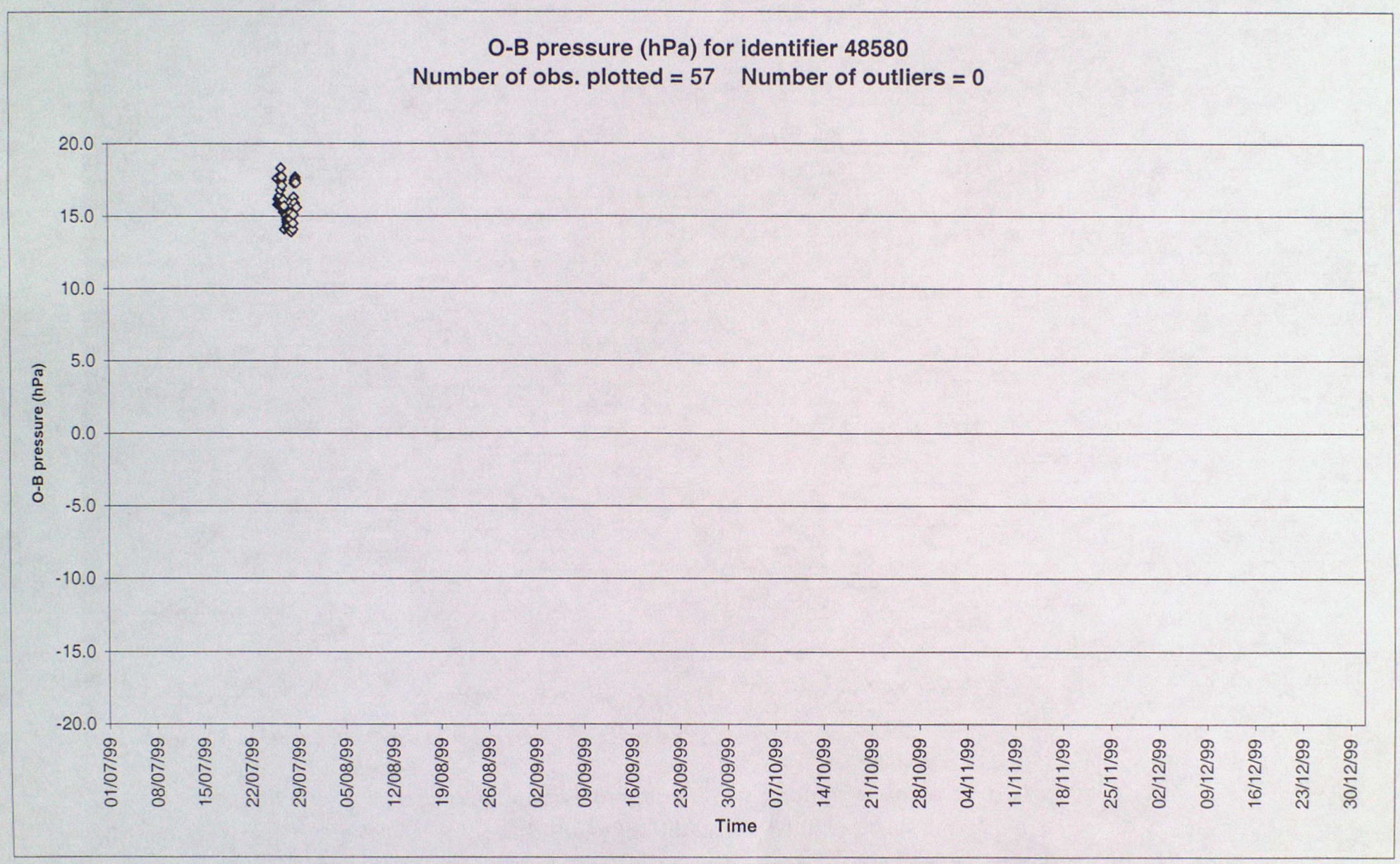

O-B pressure (hPa) for identifier 41852
Number of obs. plotted = 657 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

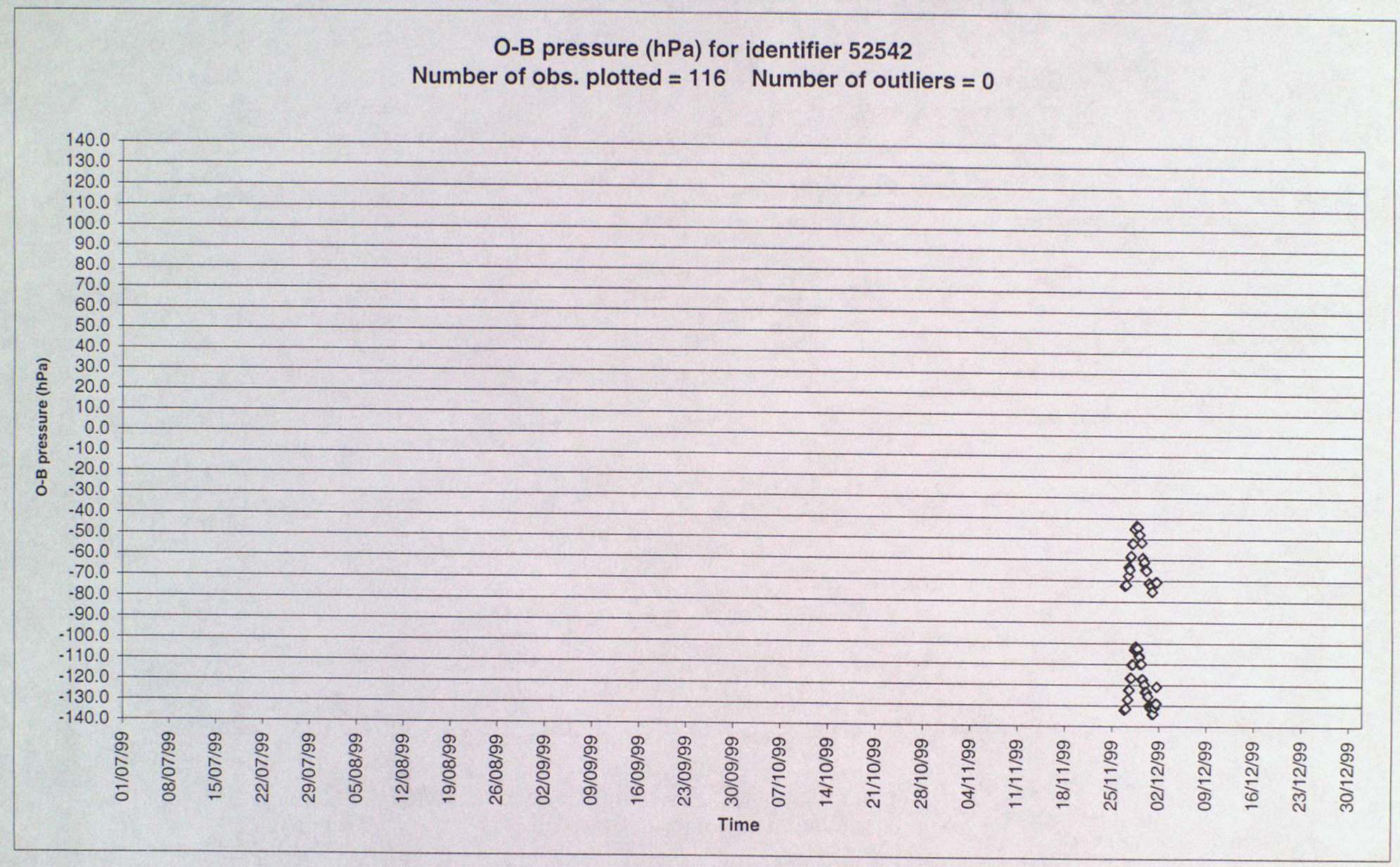

O-B pressure (hPa) for identifier 44629
Number of obs. plotted = 1225 Number of outliers = 3
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

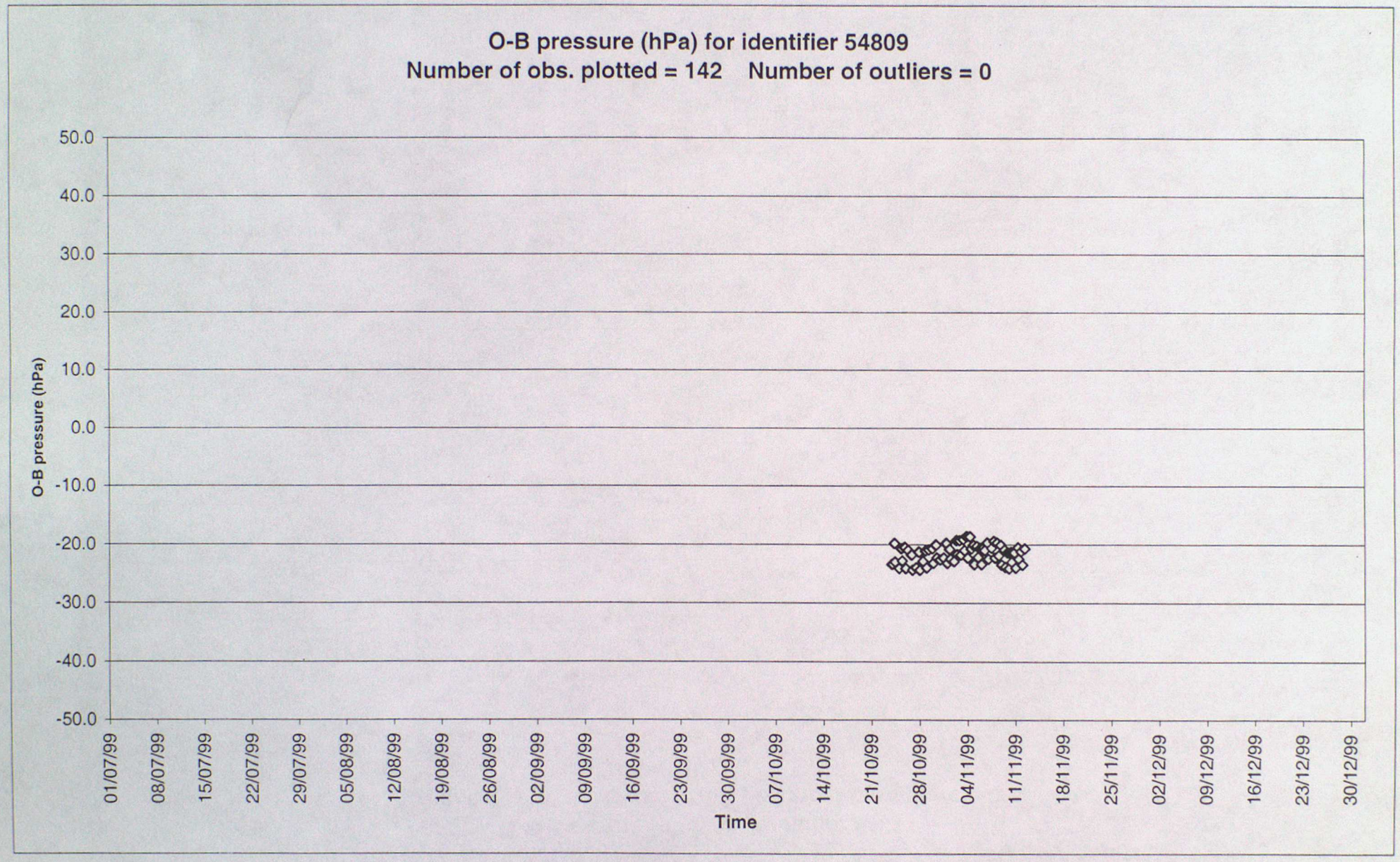

O-B pressure (hPa) for identifier 44764
Number of obs. plotted = 1049 Number of outliers = 3
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

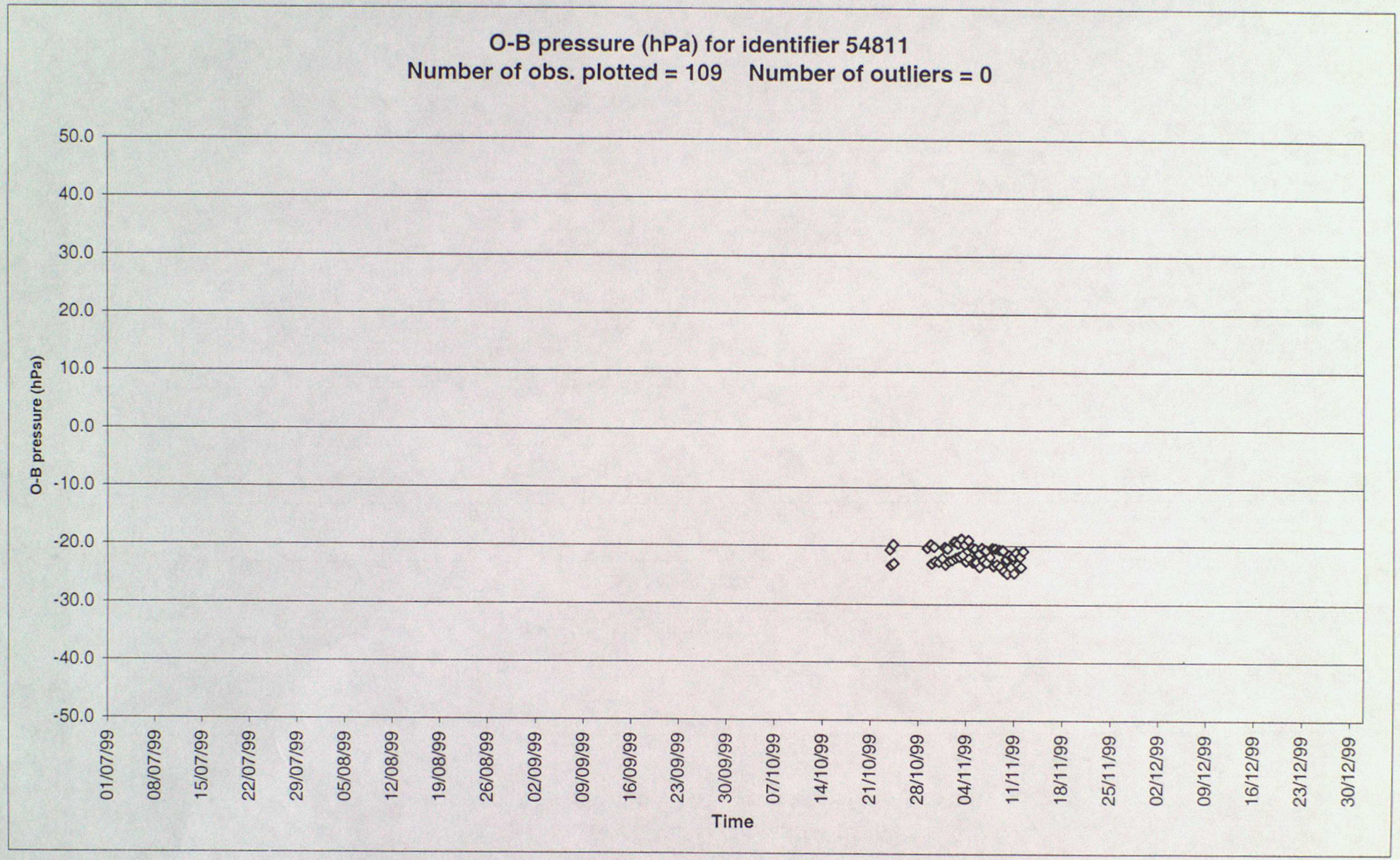

O-B pressure (hPa) for identifier 44778
Number of obs. plotted = 4160 Number of outliers = 14
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

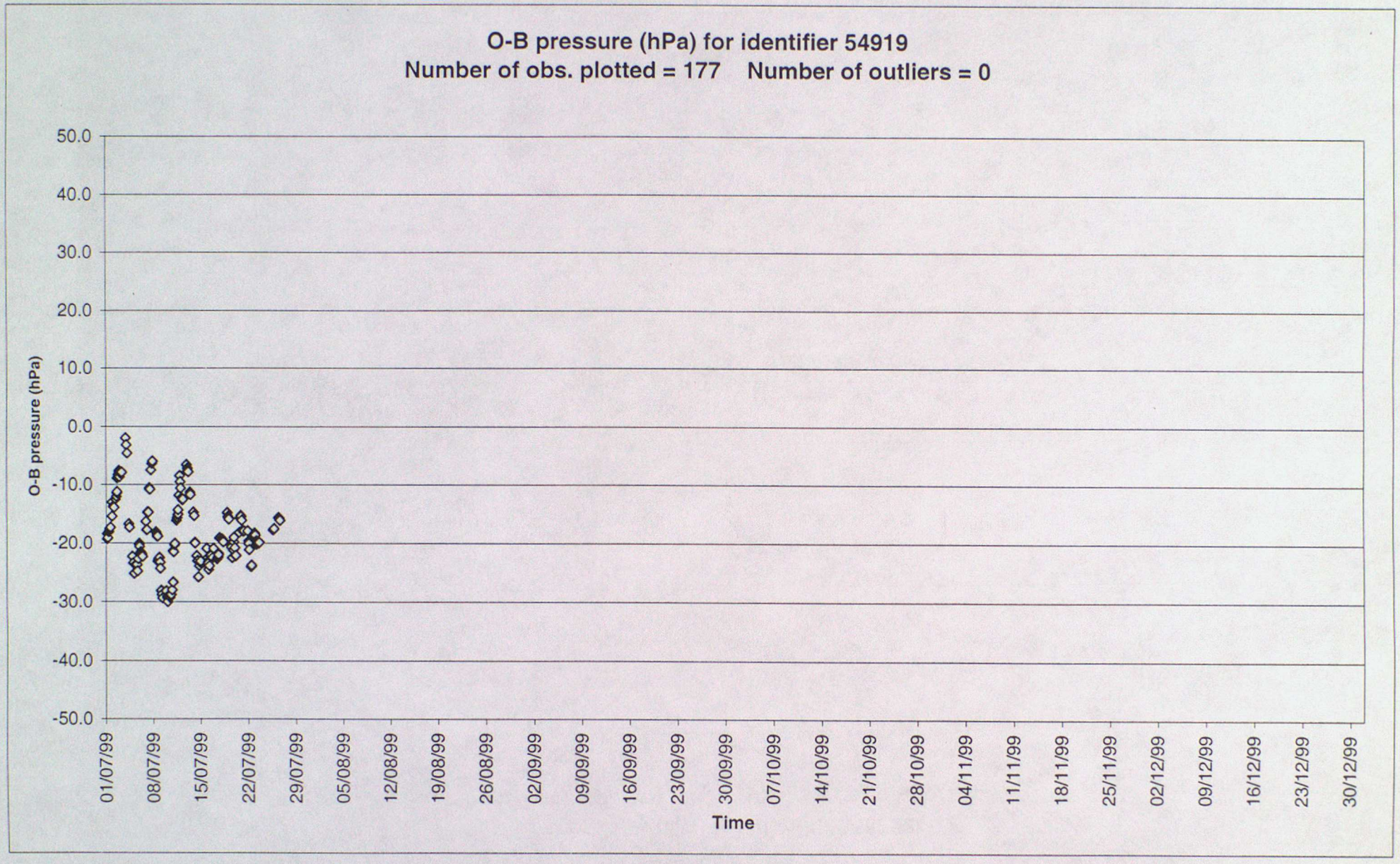

O-B pressure (hPa) for identifier 46925
Number of obs. plotted = 527 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

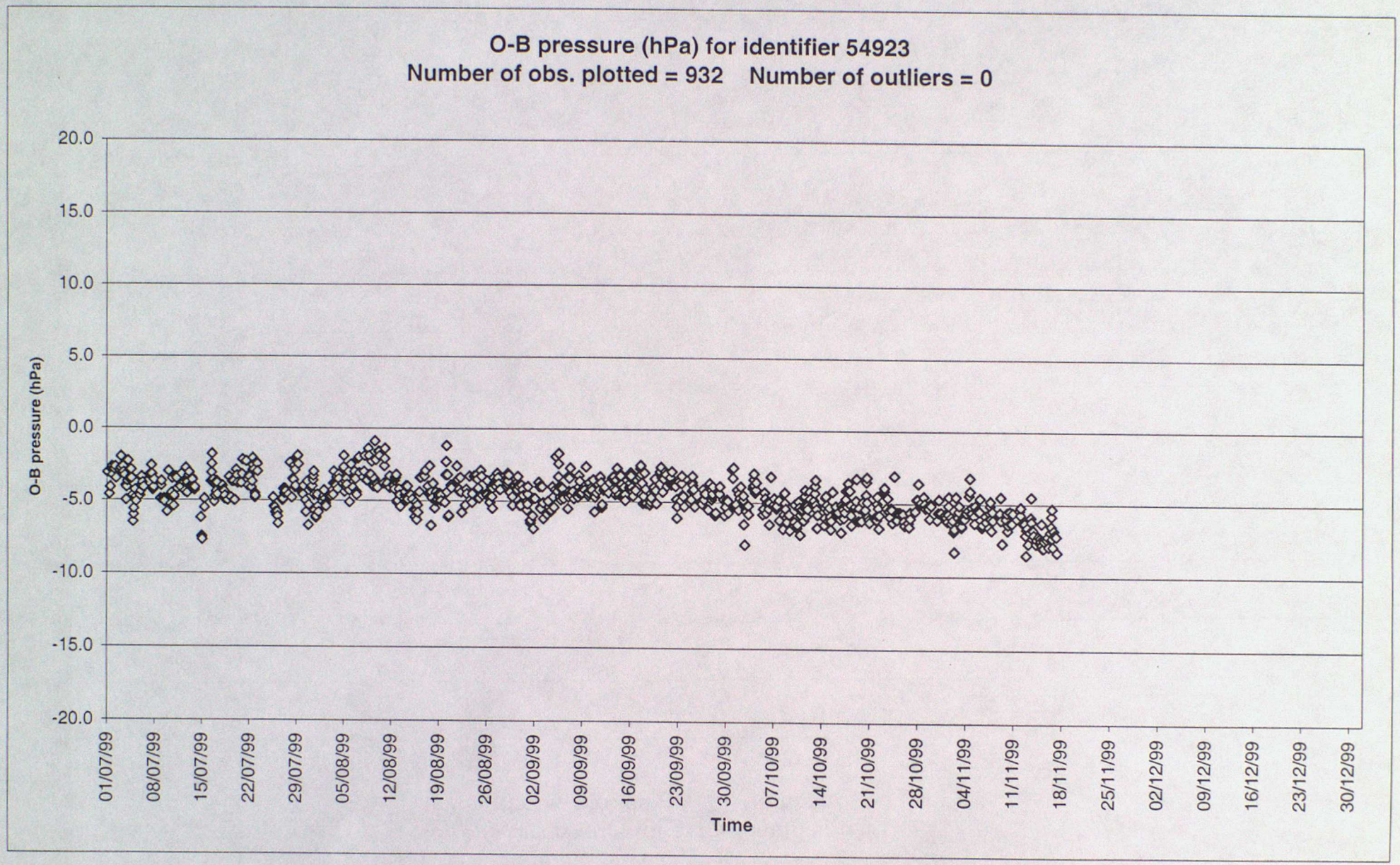

O-B pressure (hPa) for identifier 48580
Number of obs. plotted = 57 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

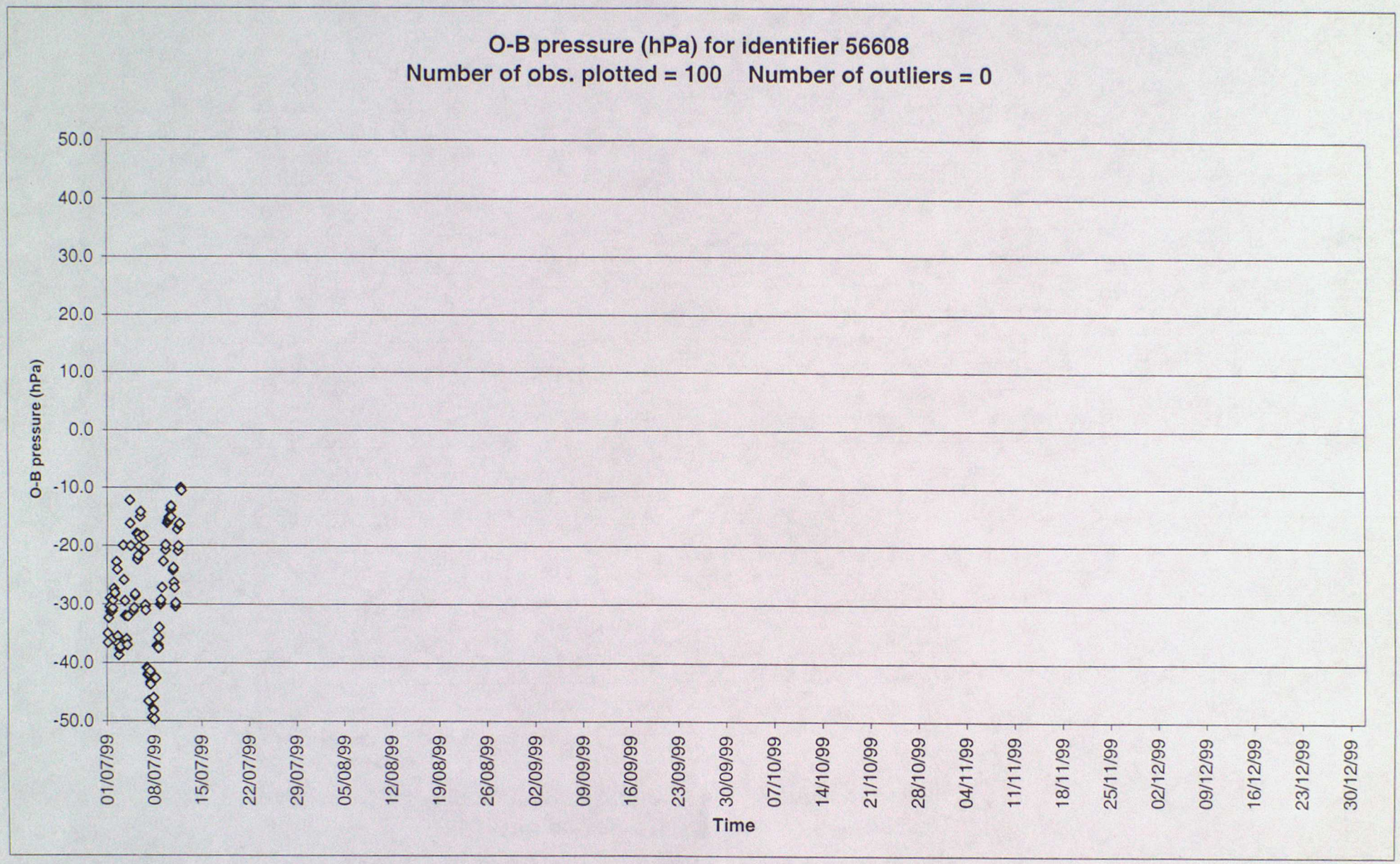

O-B pressure (hPa) for identifier 52542
Number of obs. plotted = 116 Number of outliers = 0
O-B pressure (hPa)
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
-130.0
-140.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

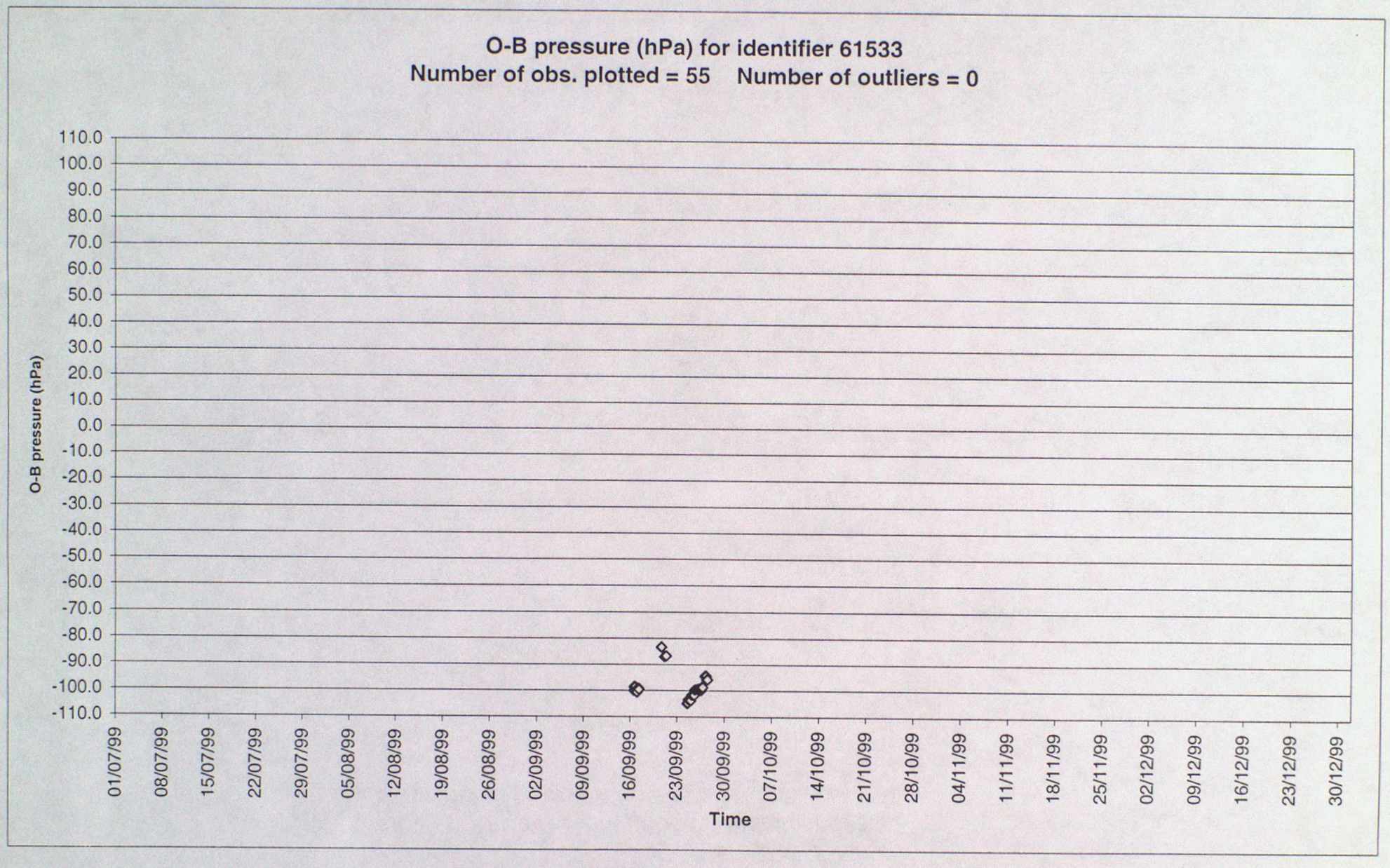

O-B pressure (hPa) for identifier 54809
Number of obs. plotted = 142 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

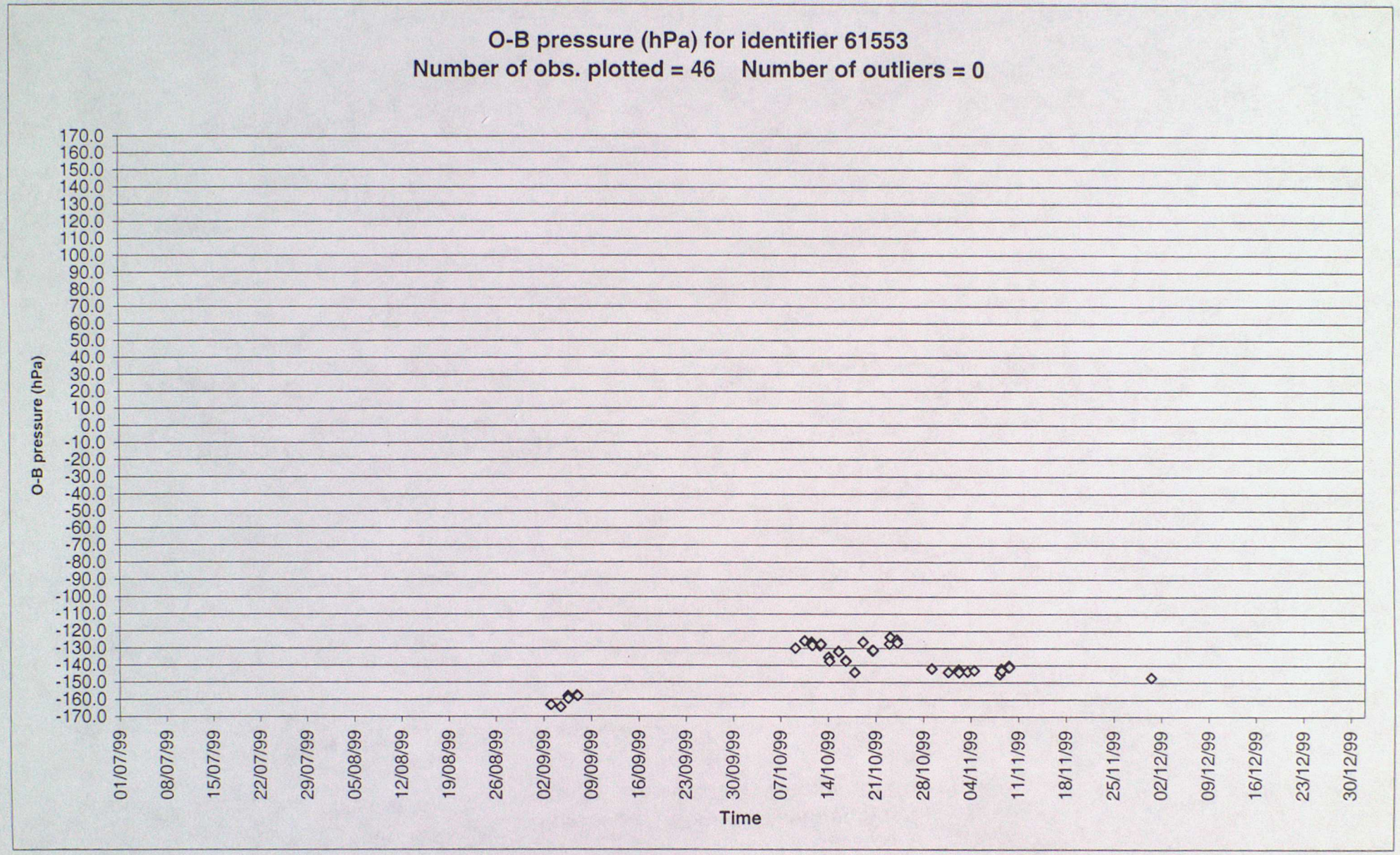

O-B pressure (hPa) for identifier 54811
Number of obs. plotted = 109 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

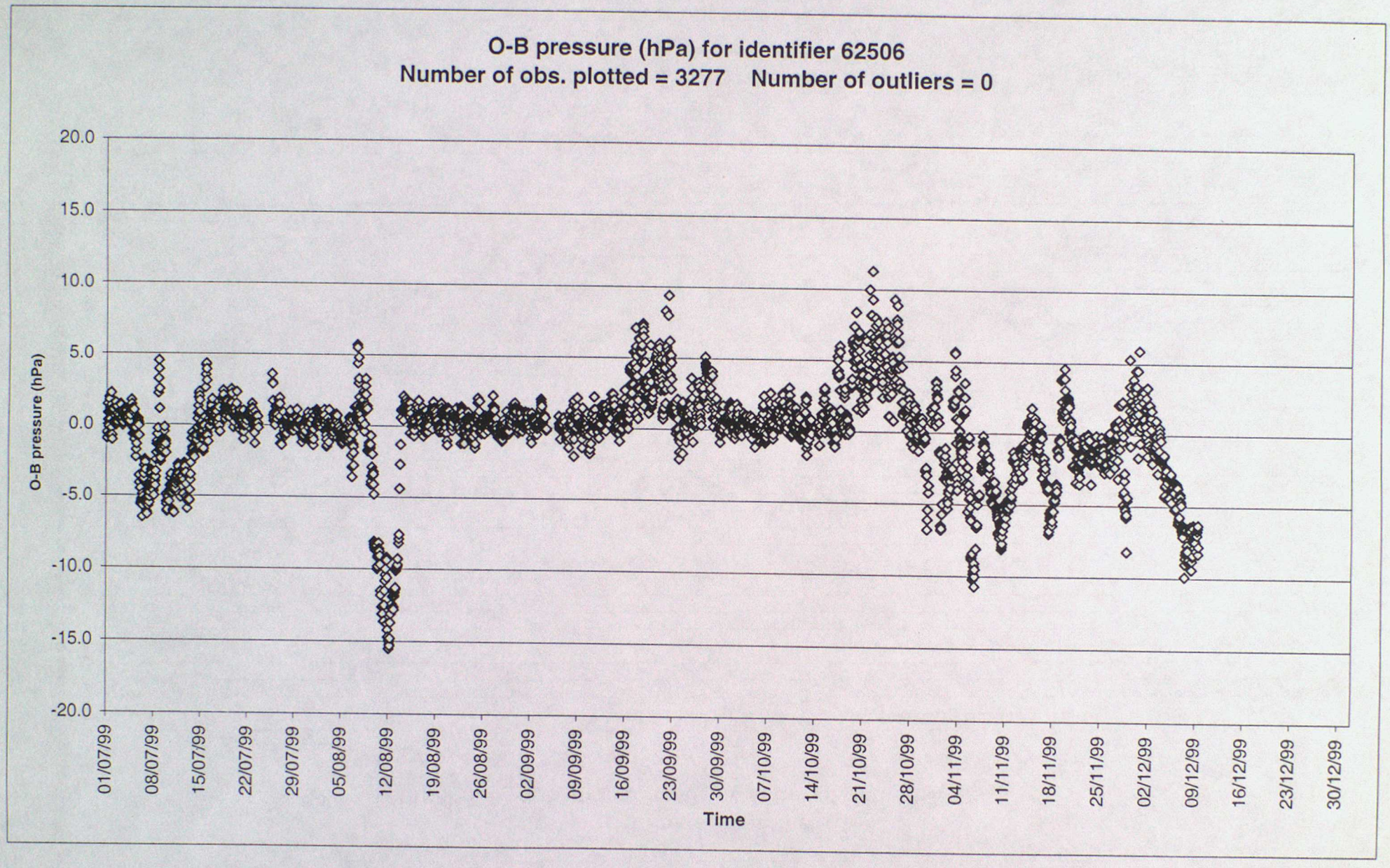

O-B pressure (hPa) for identifier 54919
Number of obs. plotted = 177 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

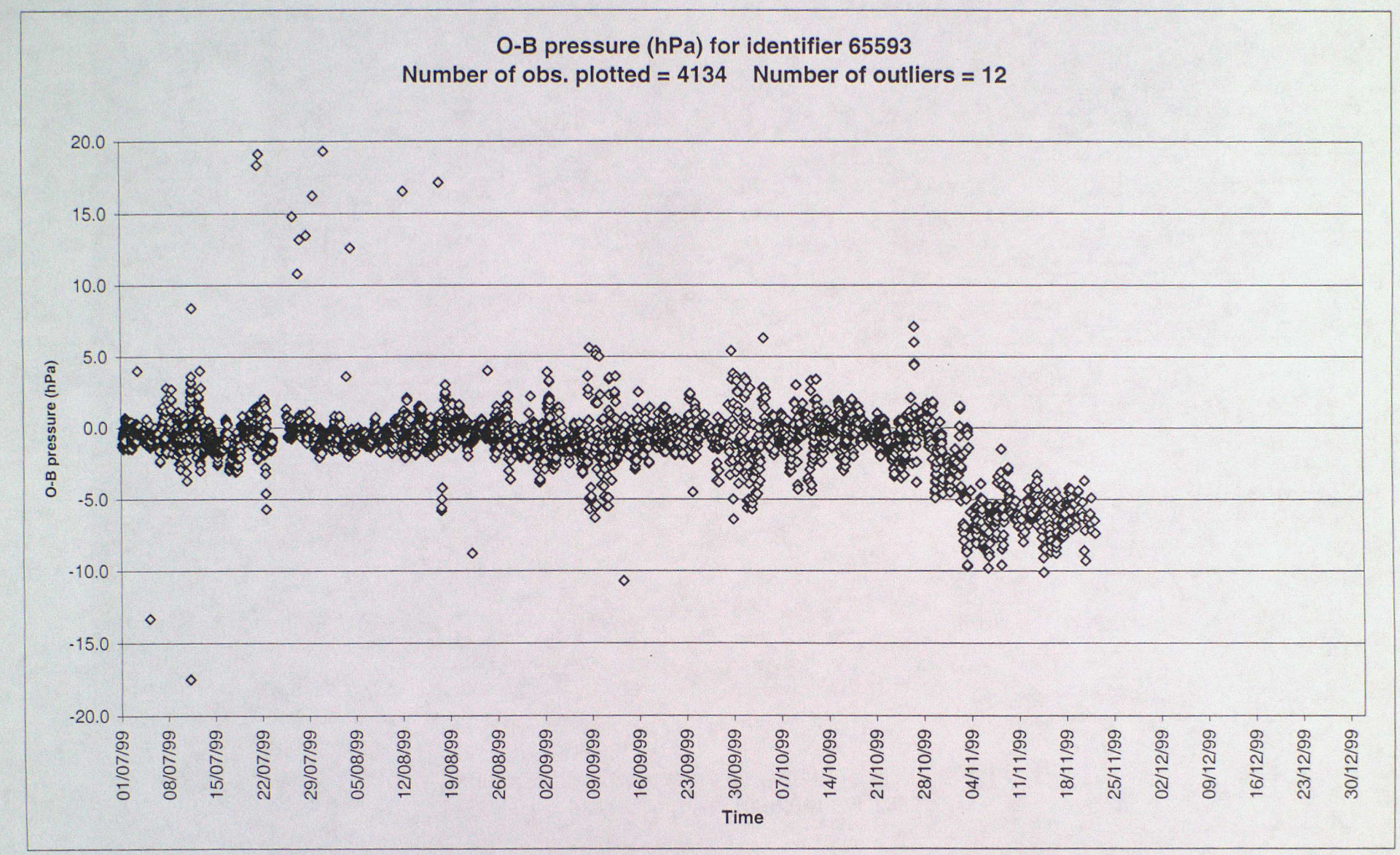

O-B pressure (hPa) for identifier 54923
Number of obs. plotted = 932 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

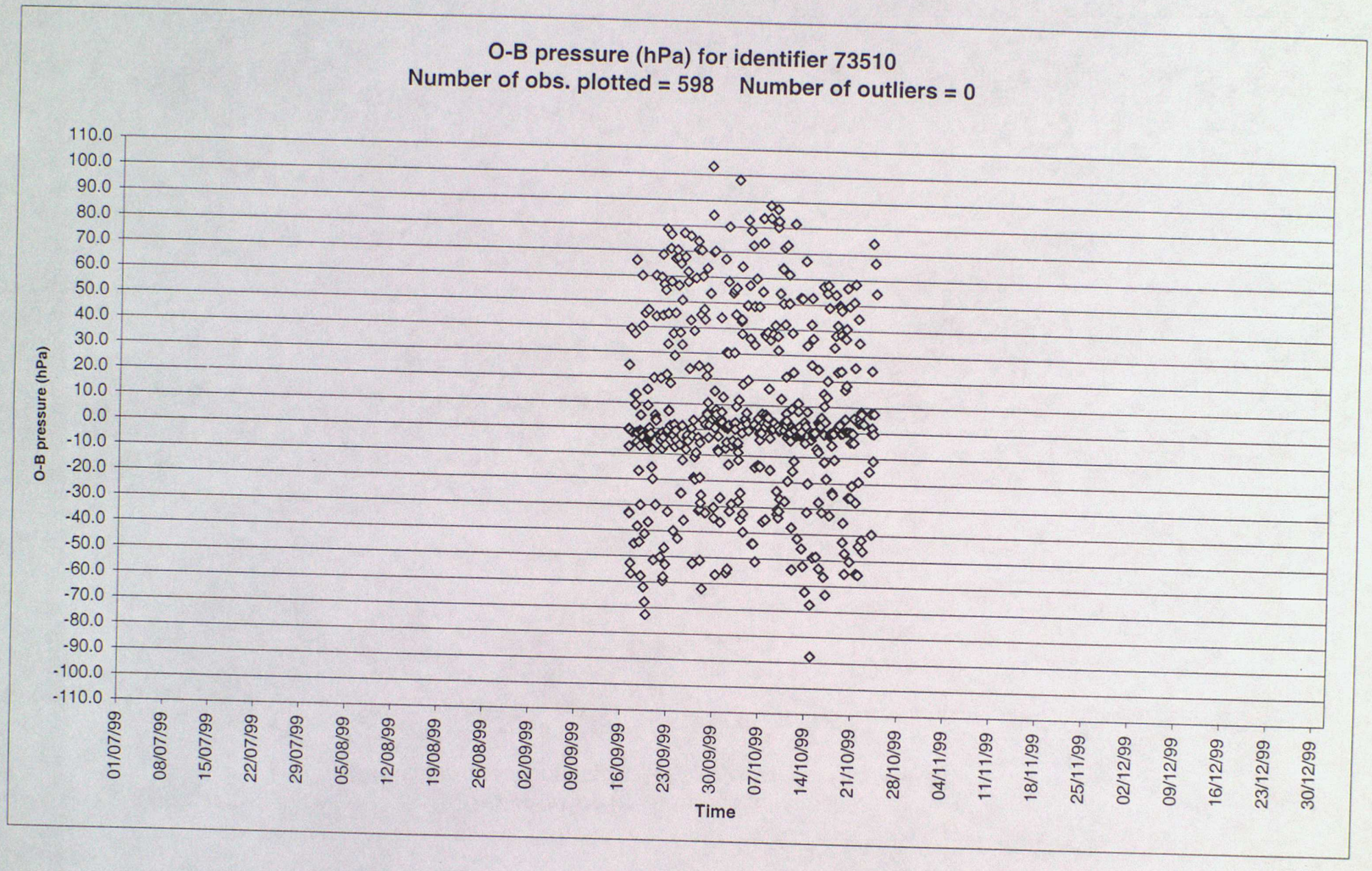

O-B pressure (hPa) for identifier 56608
Number of obs. plotted = 100 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

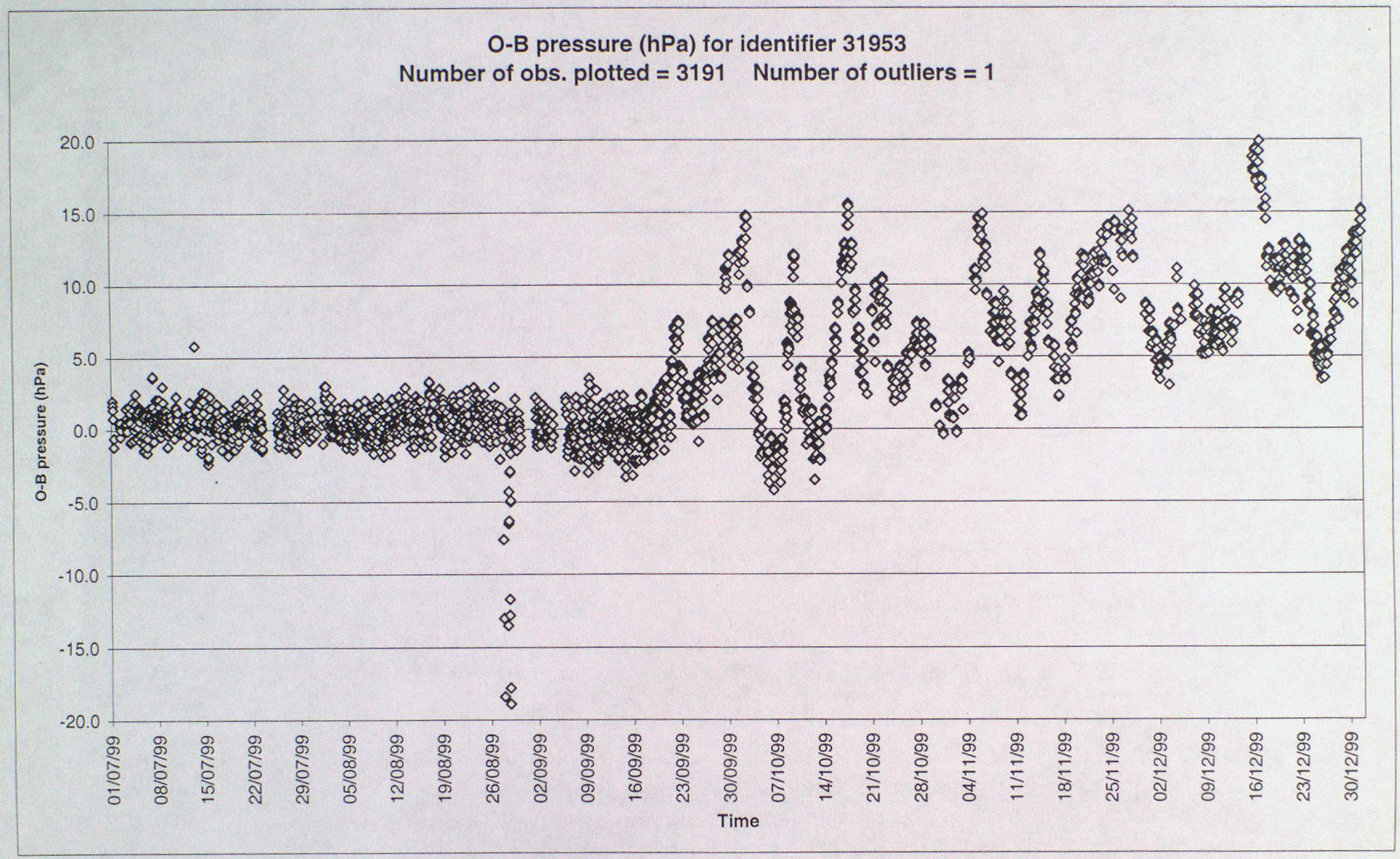

O-B pressure (hPa) for identifier 61533
Number of obs. plotted = 55 Number of outliers = 0
O-B pressure (hPa)
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

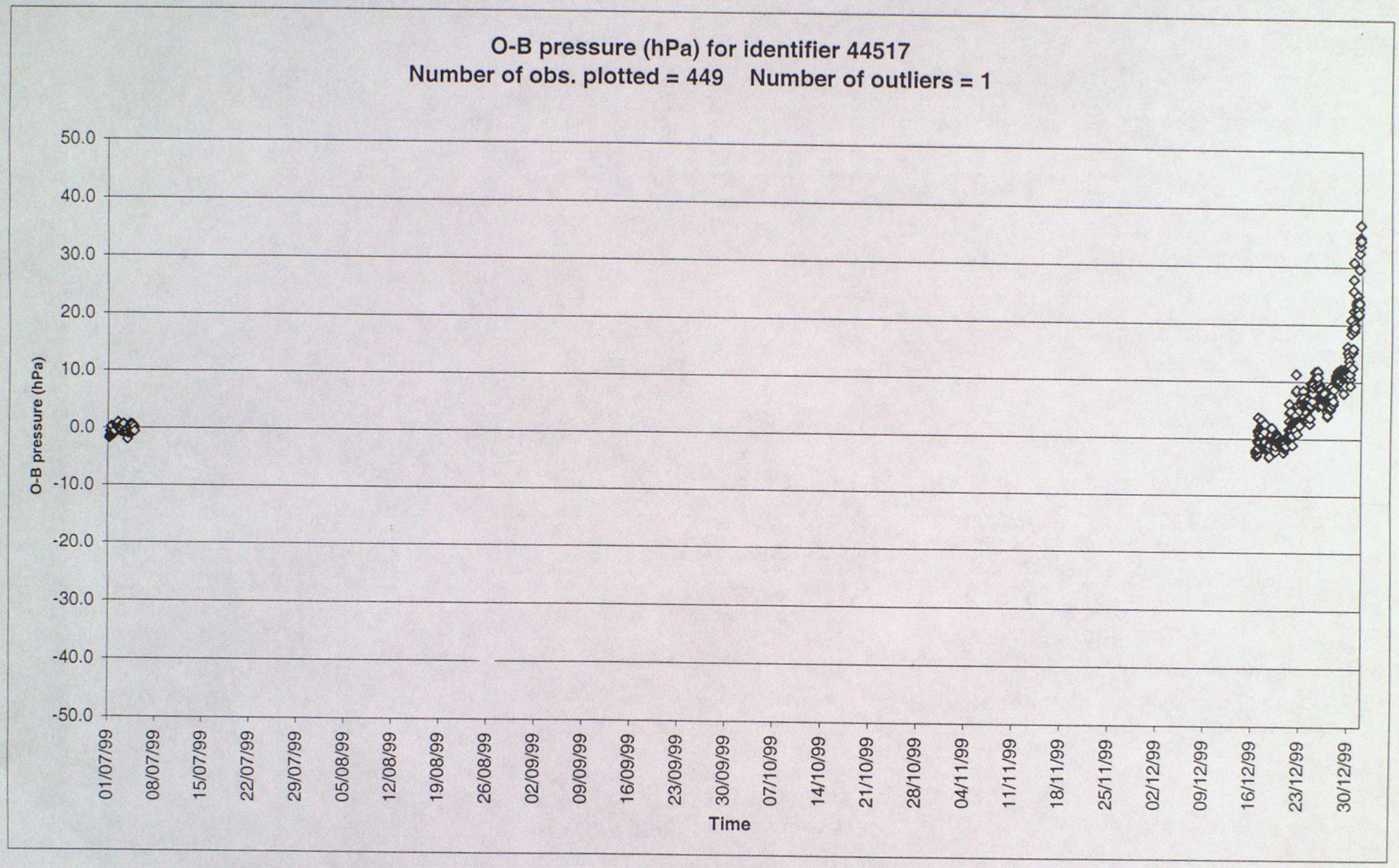

O-B pressure (hPa) for identifier 61553
Number of obs. plotted = 46 Number of outliers = 0
O-B pressure (hPa)
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

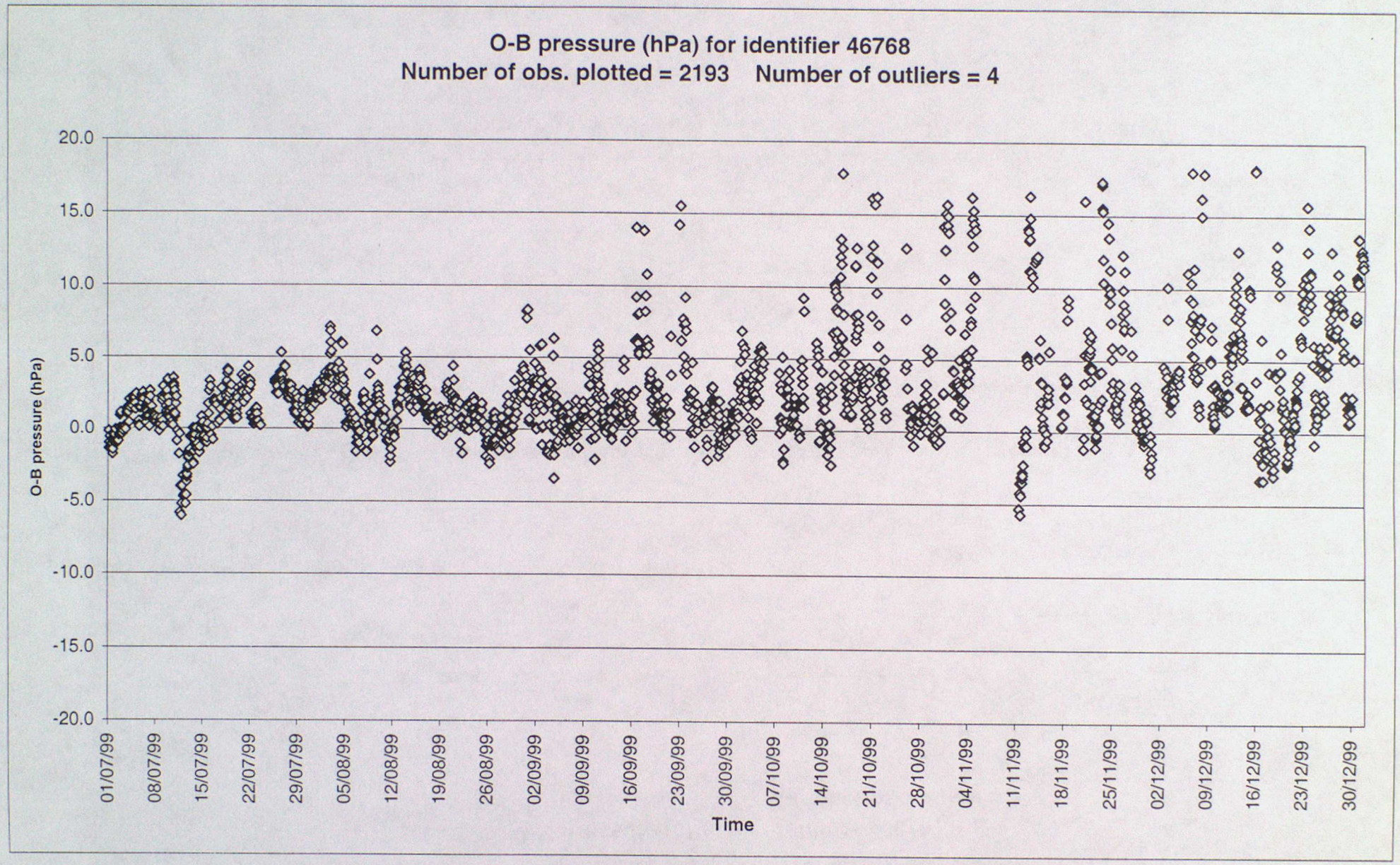

O-B pressure (hPa) for identifier 62506
Number of obs. plotted = 3277 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

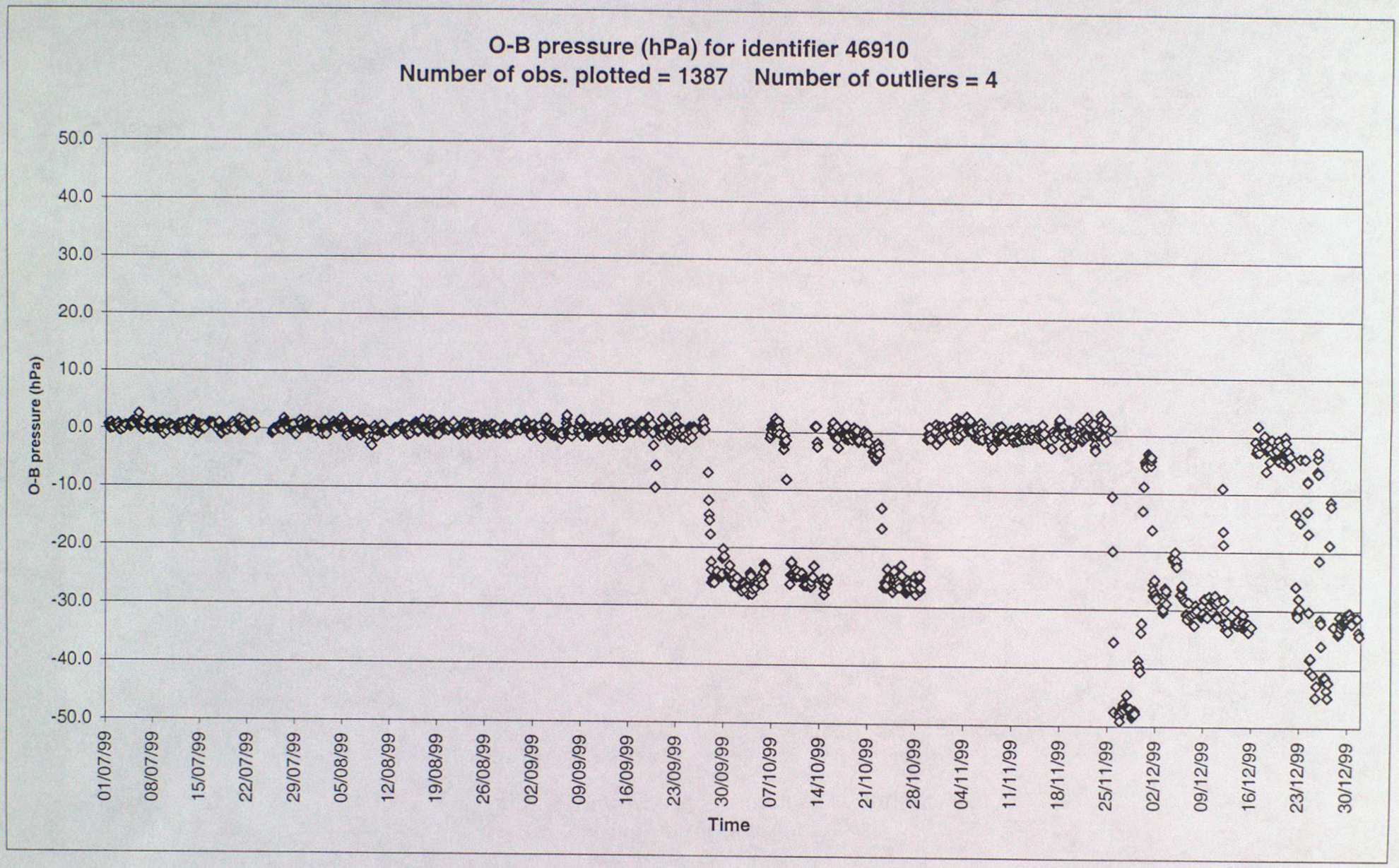

O-B pressure (hPa) for identifier 65593
Number of obs. plotted = 4134 Number of outliers = 12
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

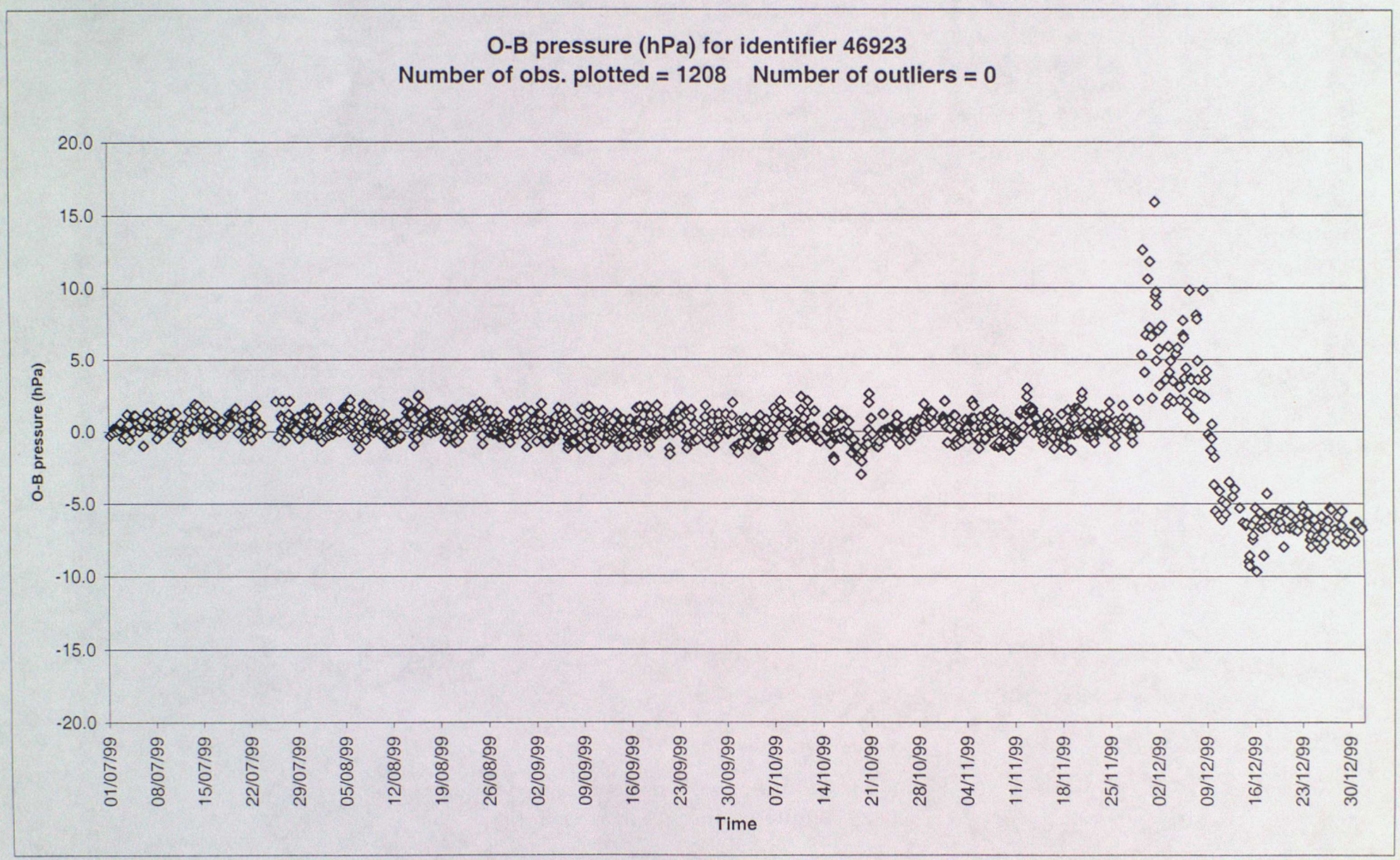

O-B pressure (hPa) for identifier 73510
Number of obs. plotted = 598 Number of outliers = 0
O-B pressure (hPa)
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier 31953
Number of obs. plotted = 3191 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier 44517
Number of obs. plotted = 449 Number of outliers = 1
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier 46768
Number of obs. plotted = 2193 Number of outliers = 4
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier 46910
Number of obs. plotted = 1387 Number of outliers = 4
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier 46923
Number of obs. plotted = 1208 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
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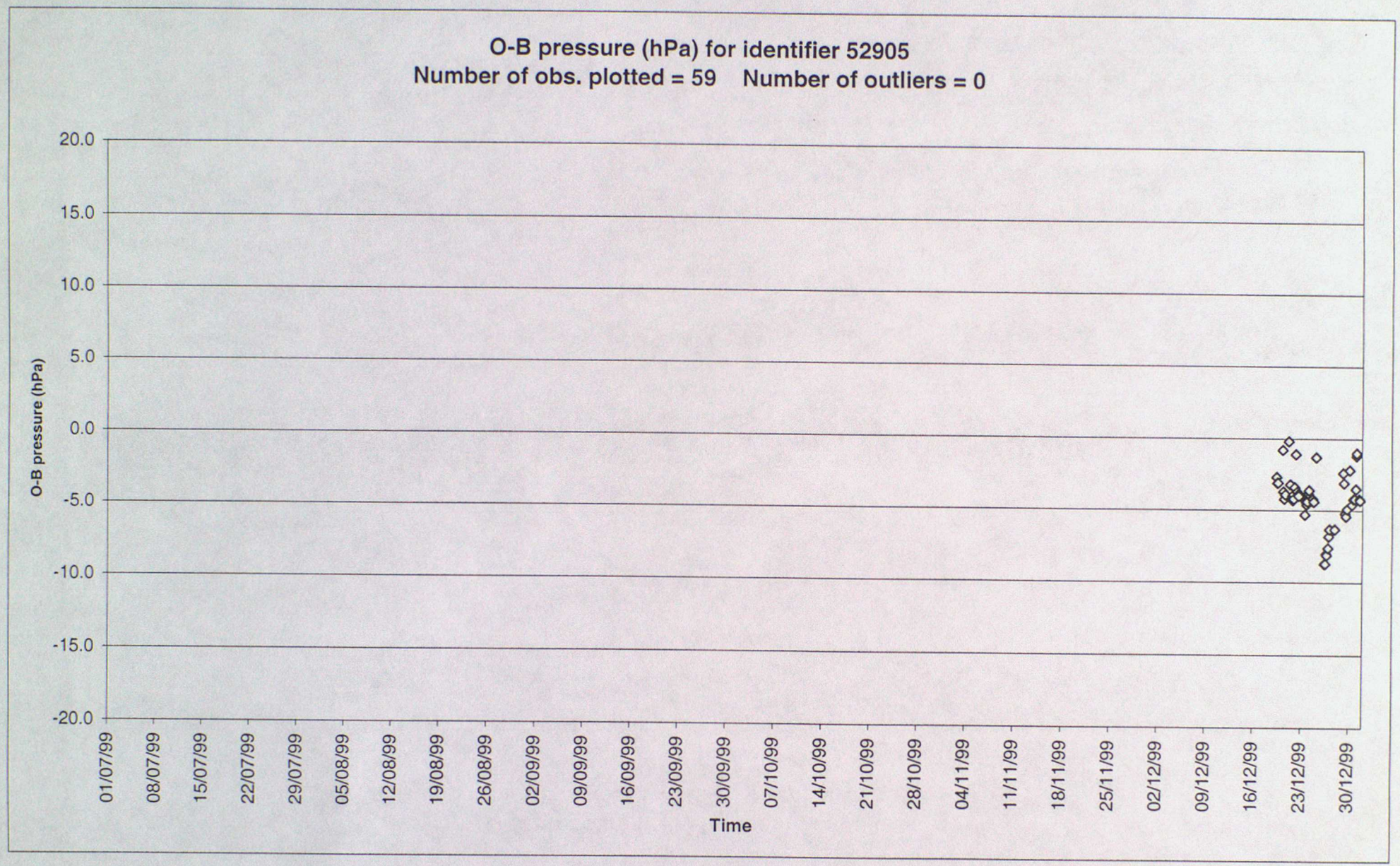
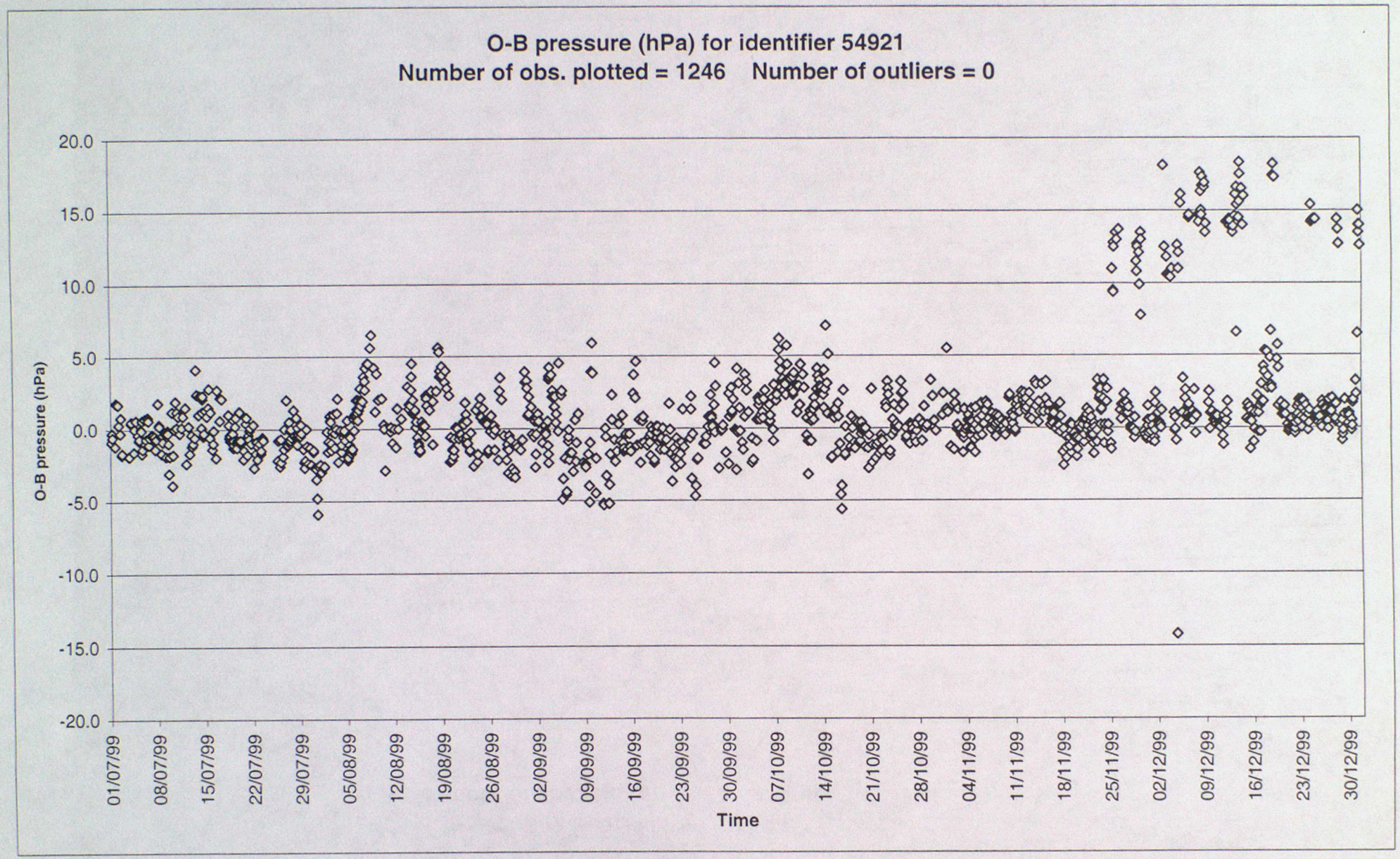
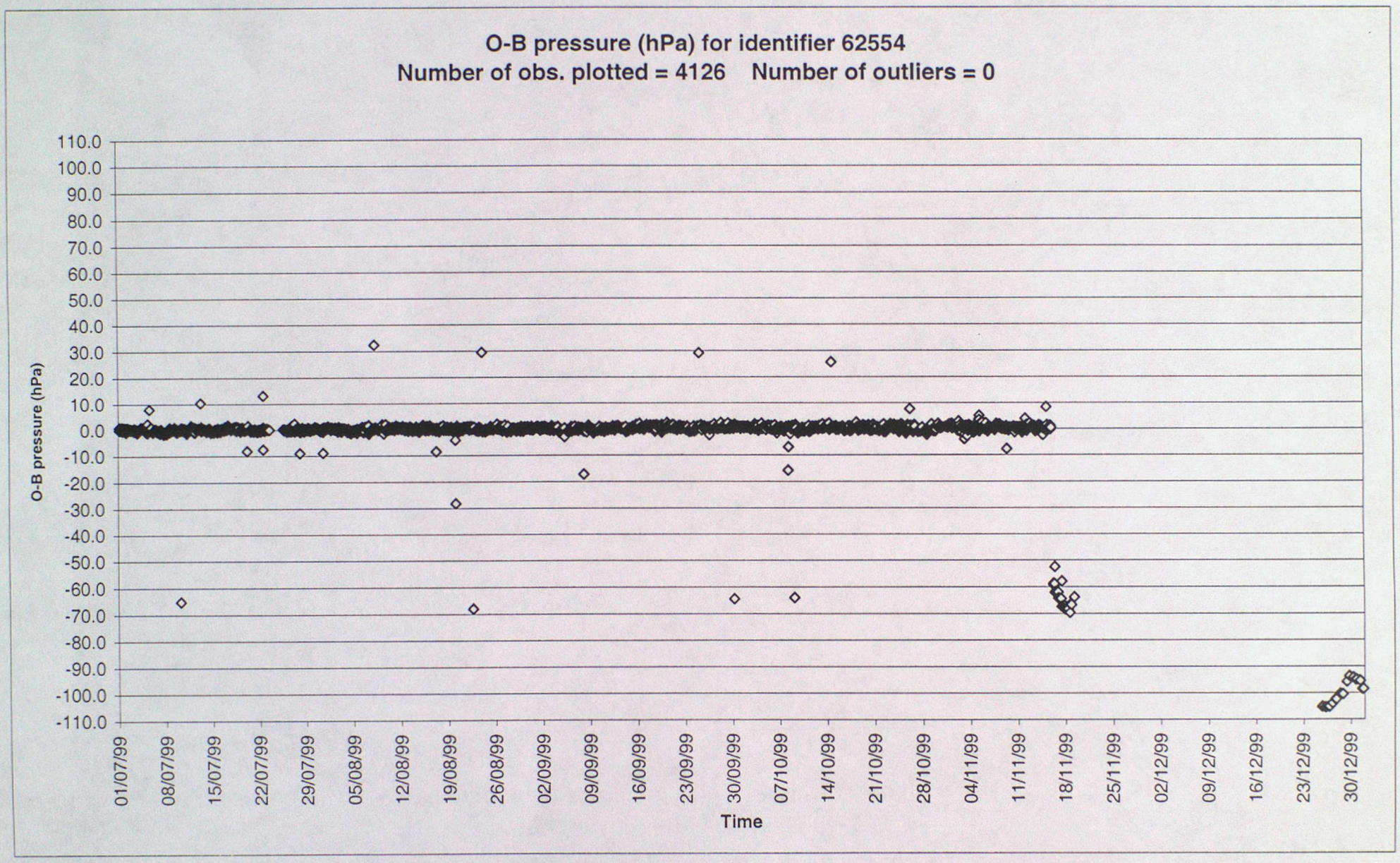
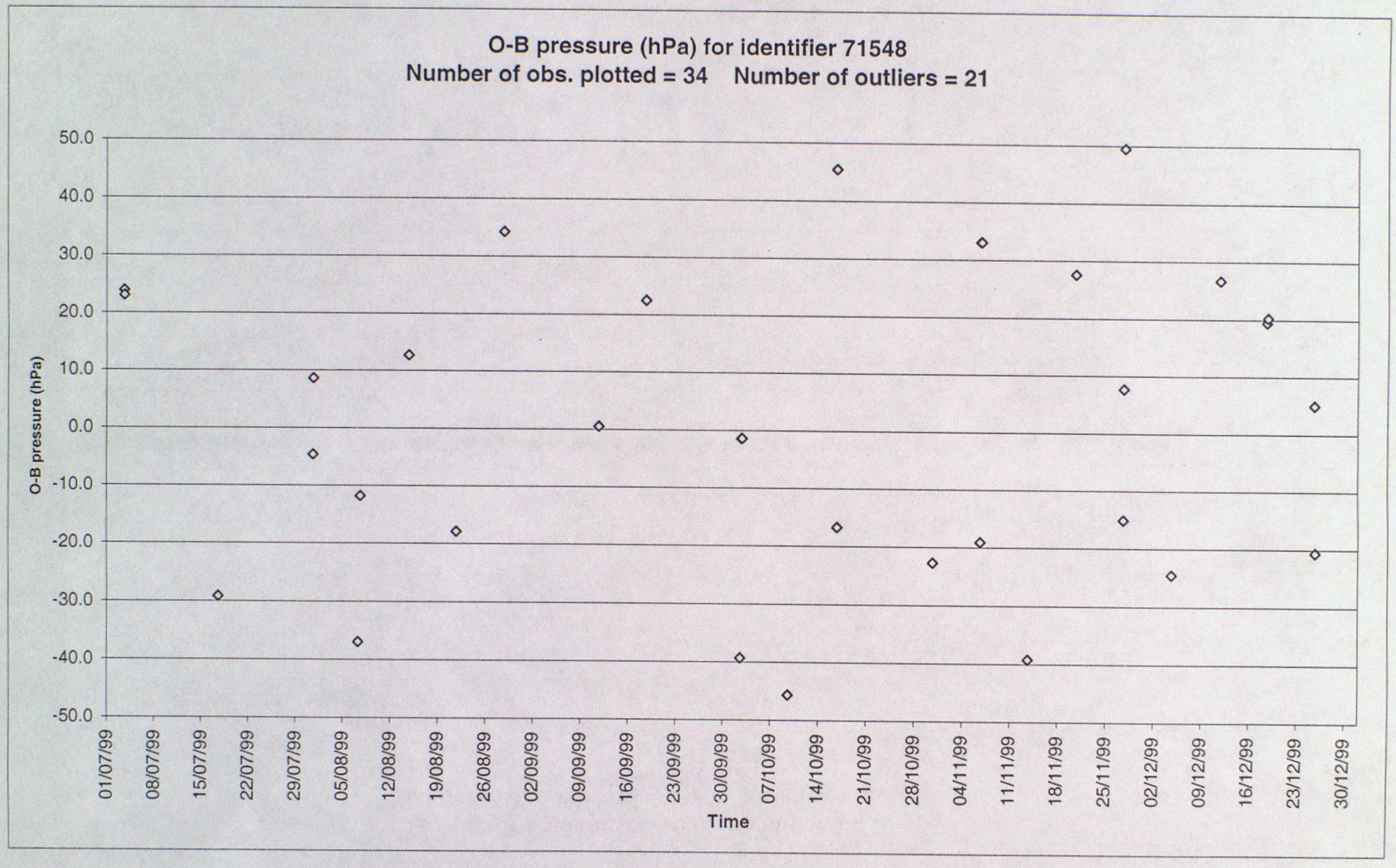
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

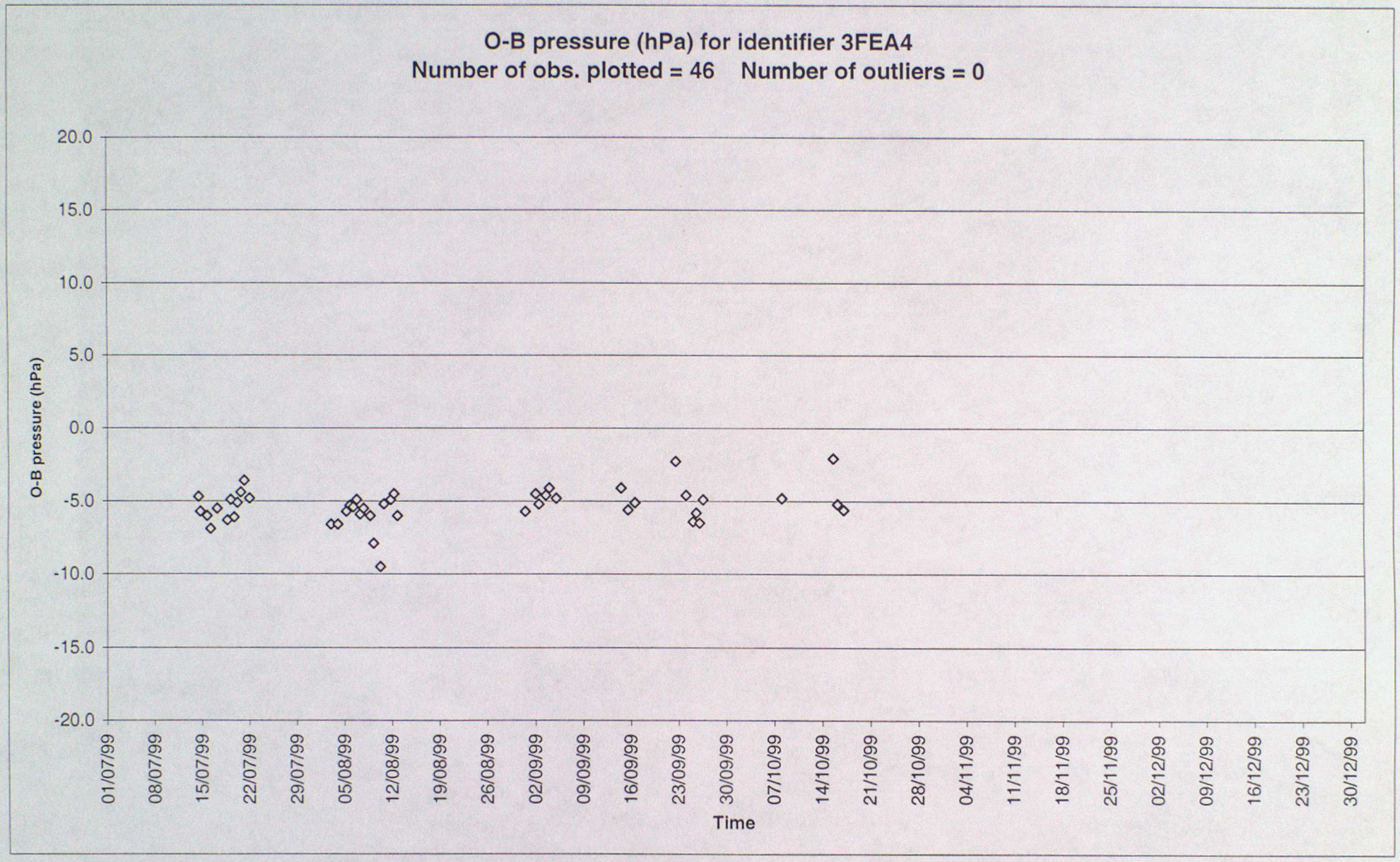

O-B pressure (hPa) for identifier 52905
Number of obs. plotted = 59 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

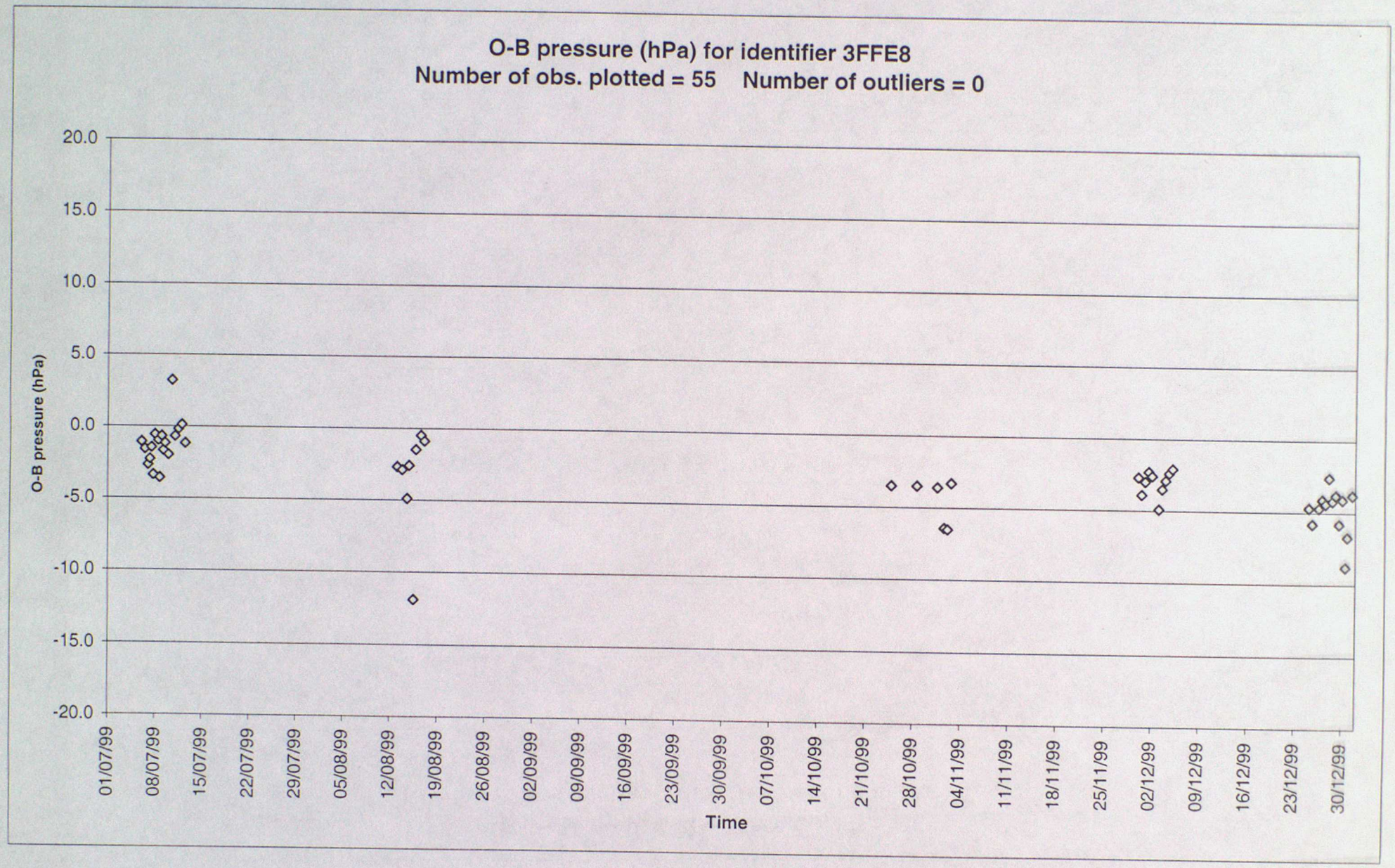

O-B pressure (hPa) for identifier 54921
Number of obs. plotted = 1246 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

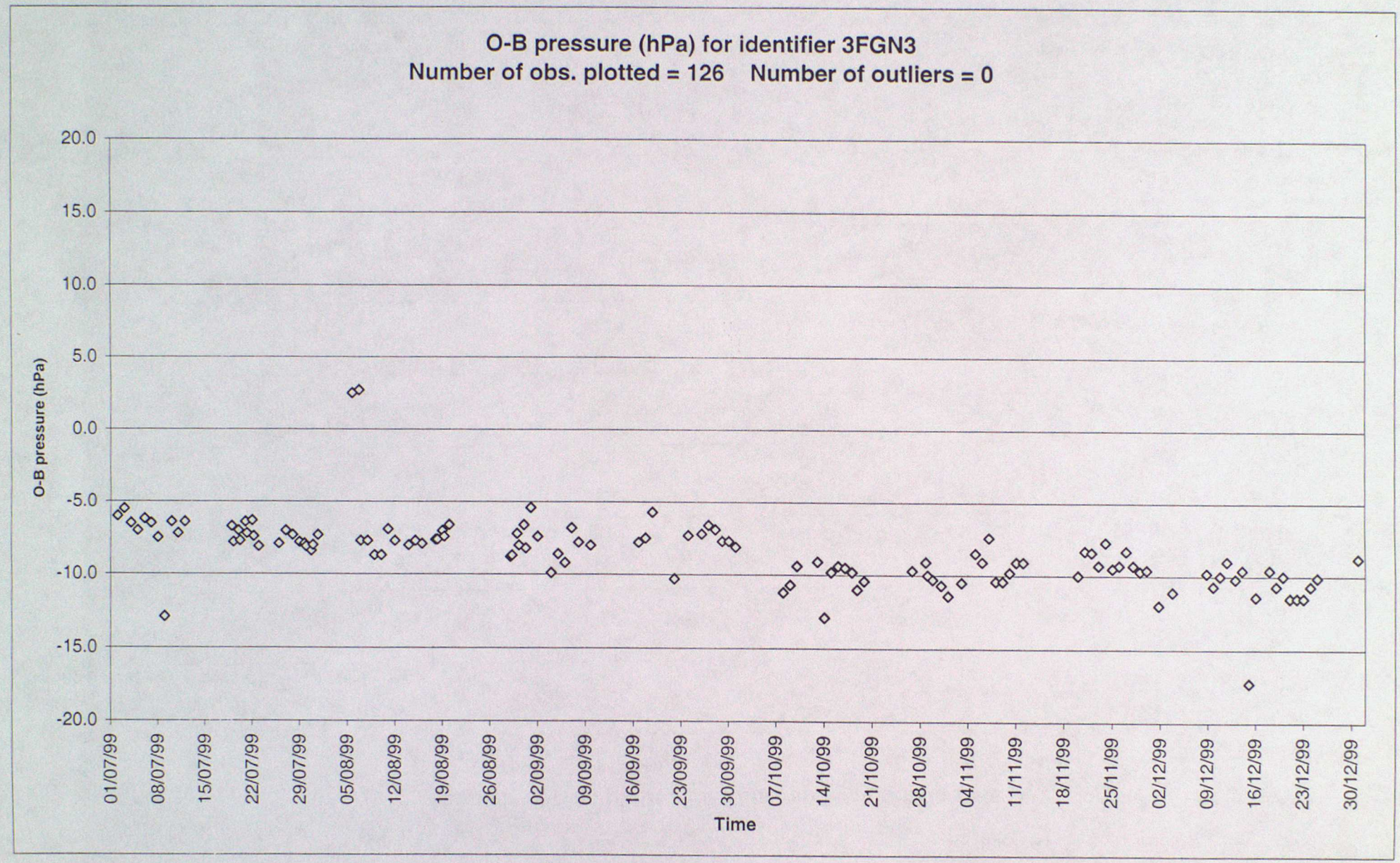
O-B pressure (hPa) for identifier 61537
Number of obs. plotted = 662 Number of outliers = 0
O-B pressure (hPa)
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-180.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

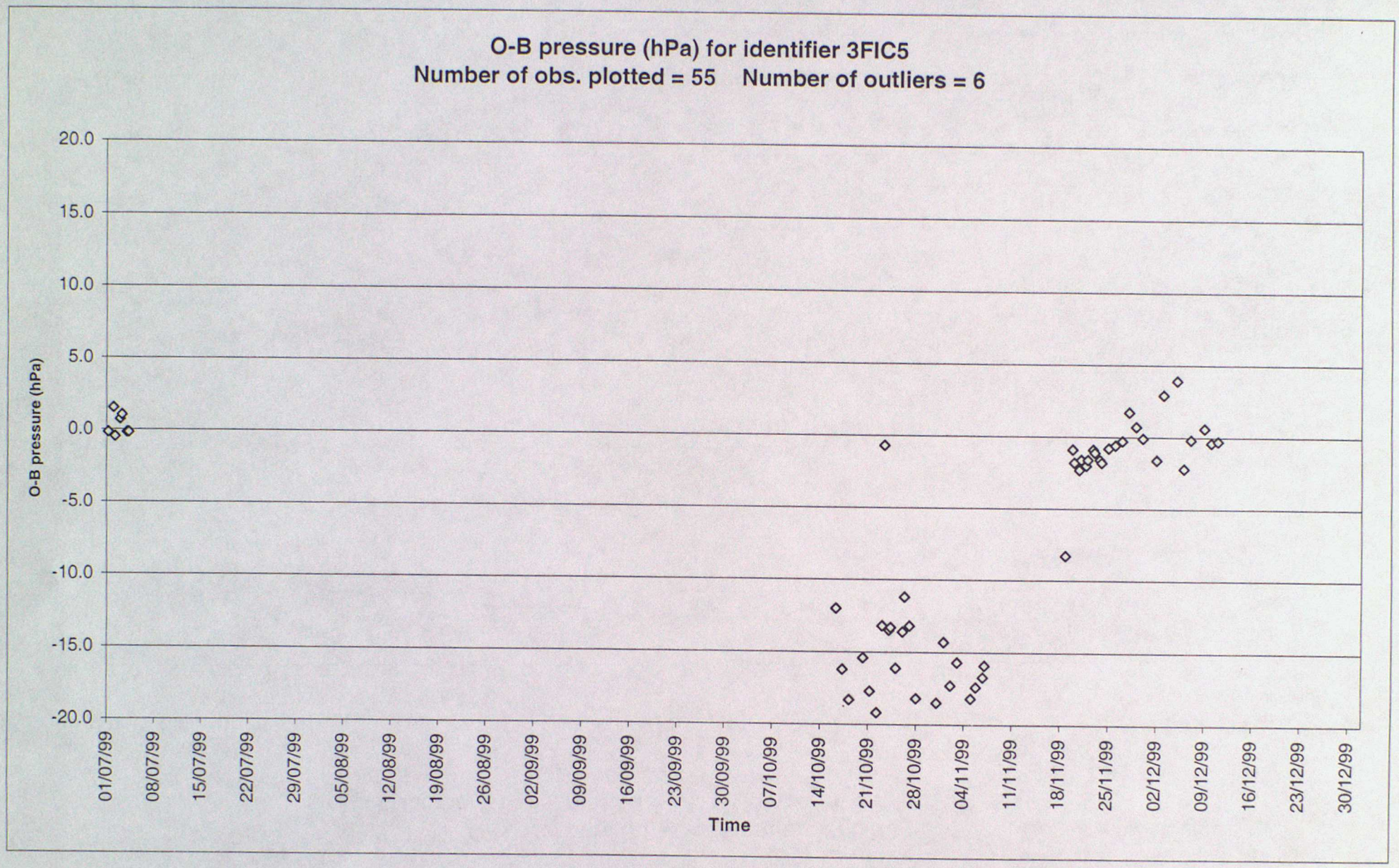

O-B pressure (hPa) for identifier 62554
Number of obs. plotted = 4126 Number of outliers = 0
O-B pressure (hPa)
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

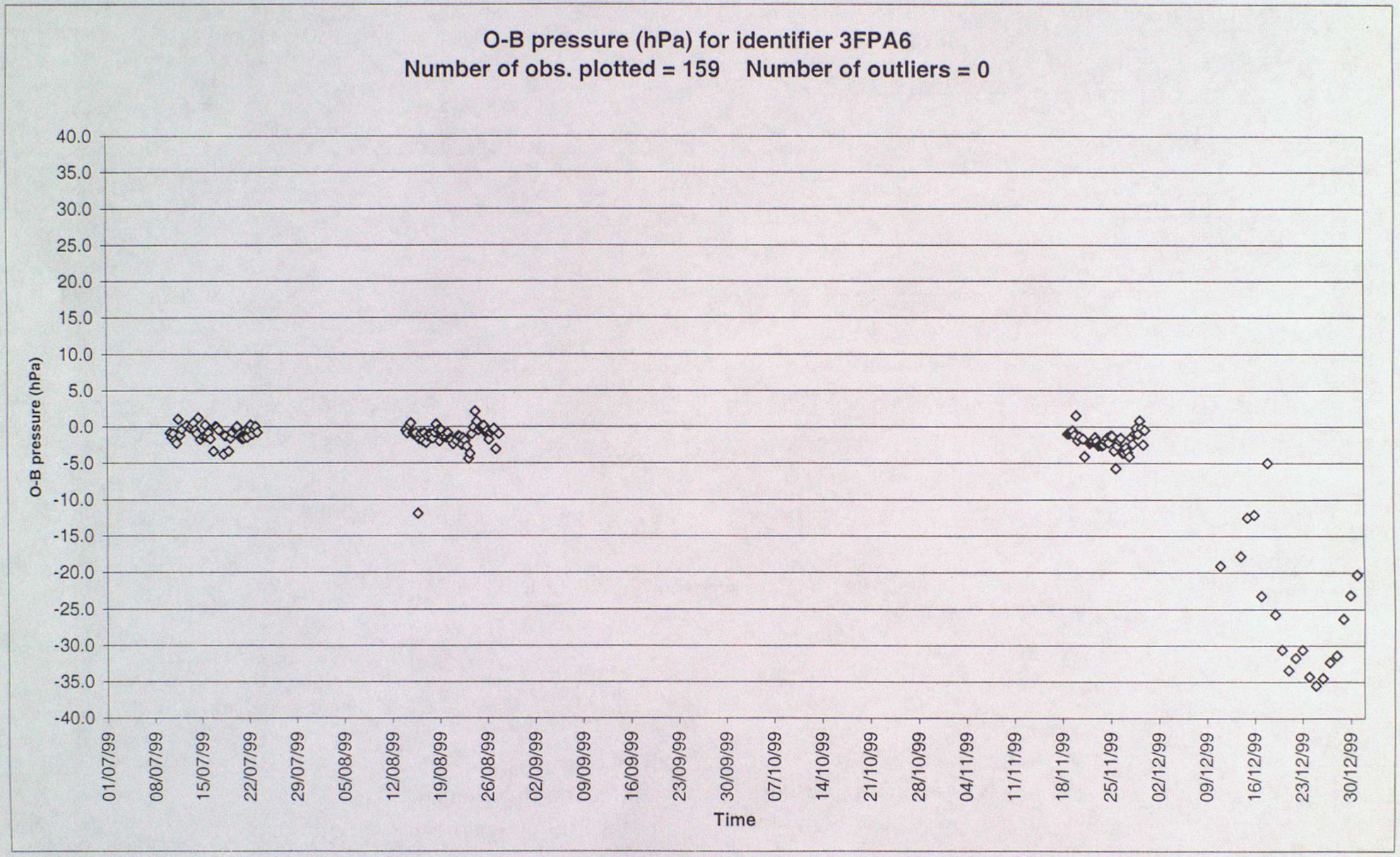

O-B pressure (hPa) for identifier 71548
Number of obs. plotted = 34 Number of outliers = 21
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

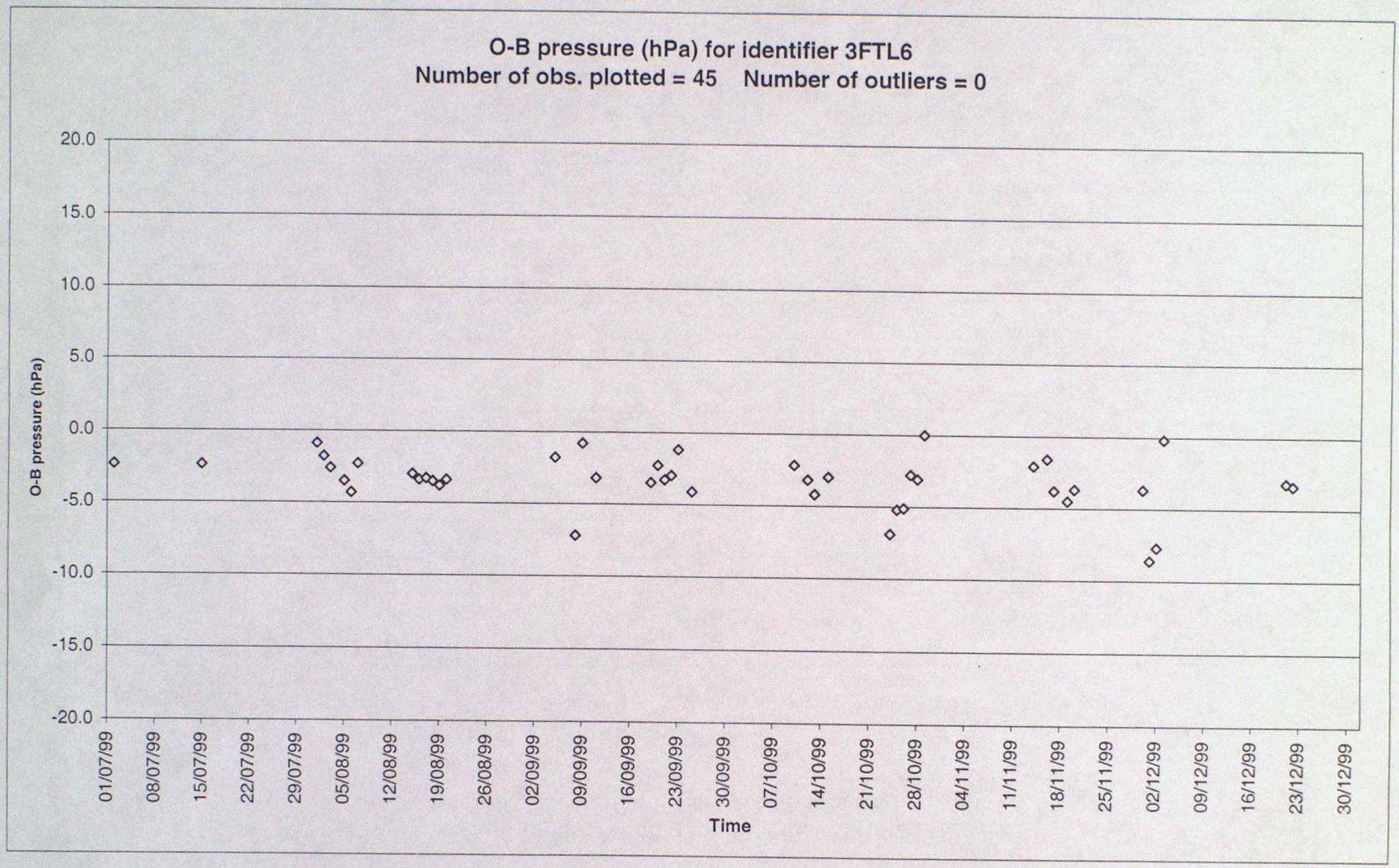

O-B pressure (hPa) for identifier 3FEA4
Number of obs. plotted = 46 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

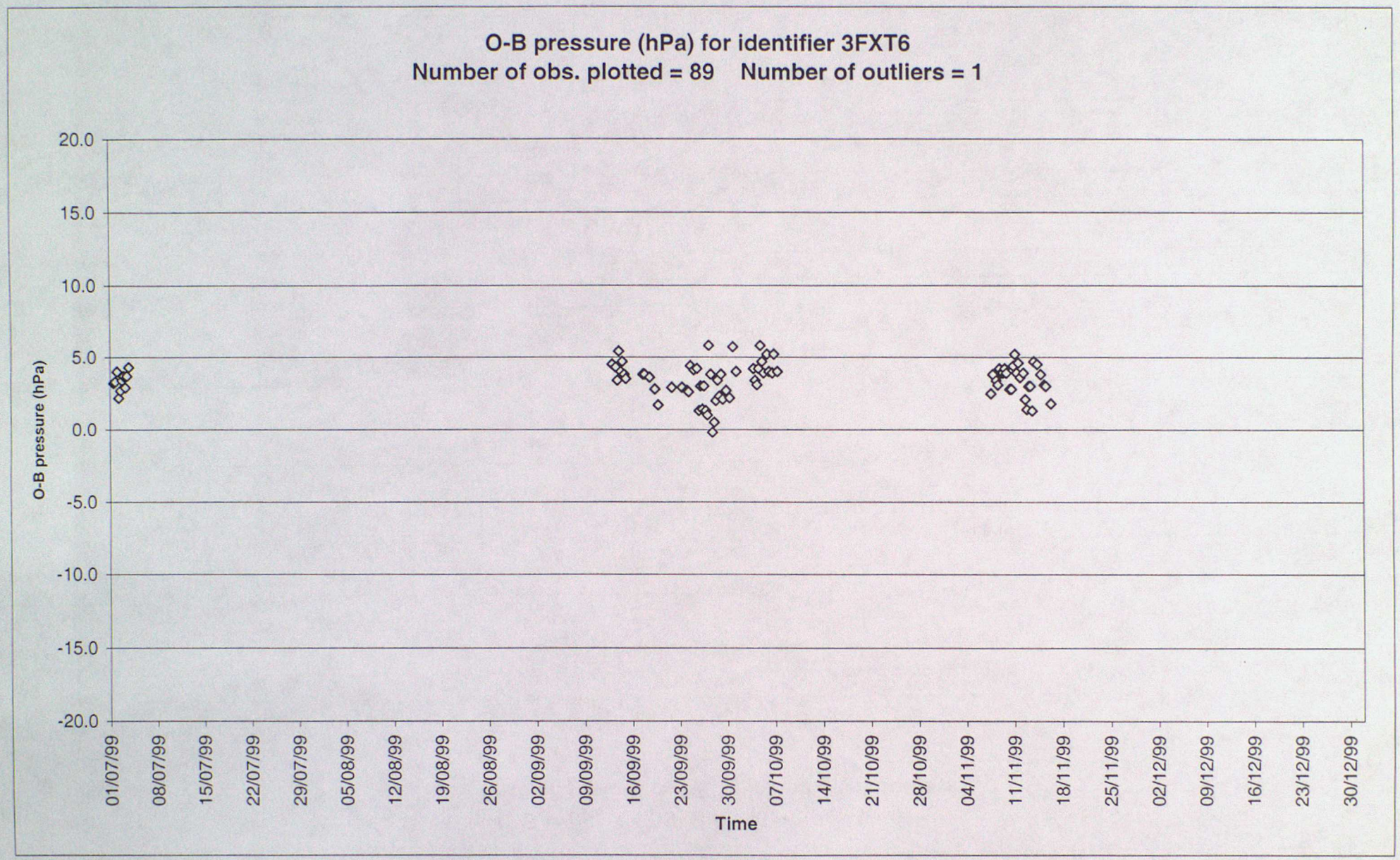

O-B pressure (hPa) for identifier 3FFE8
Number of obs. plotted = 55 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

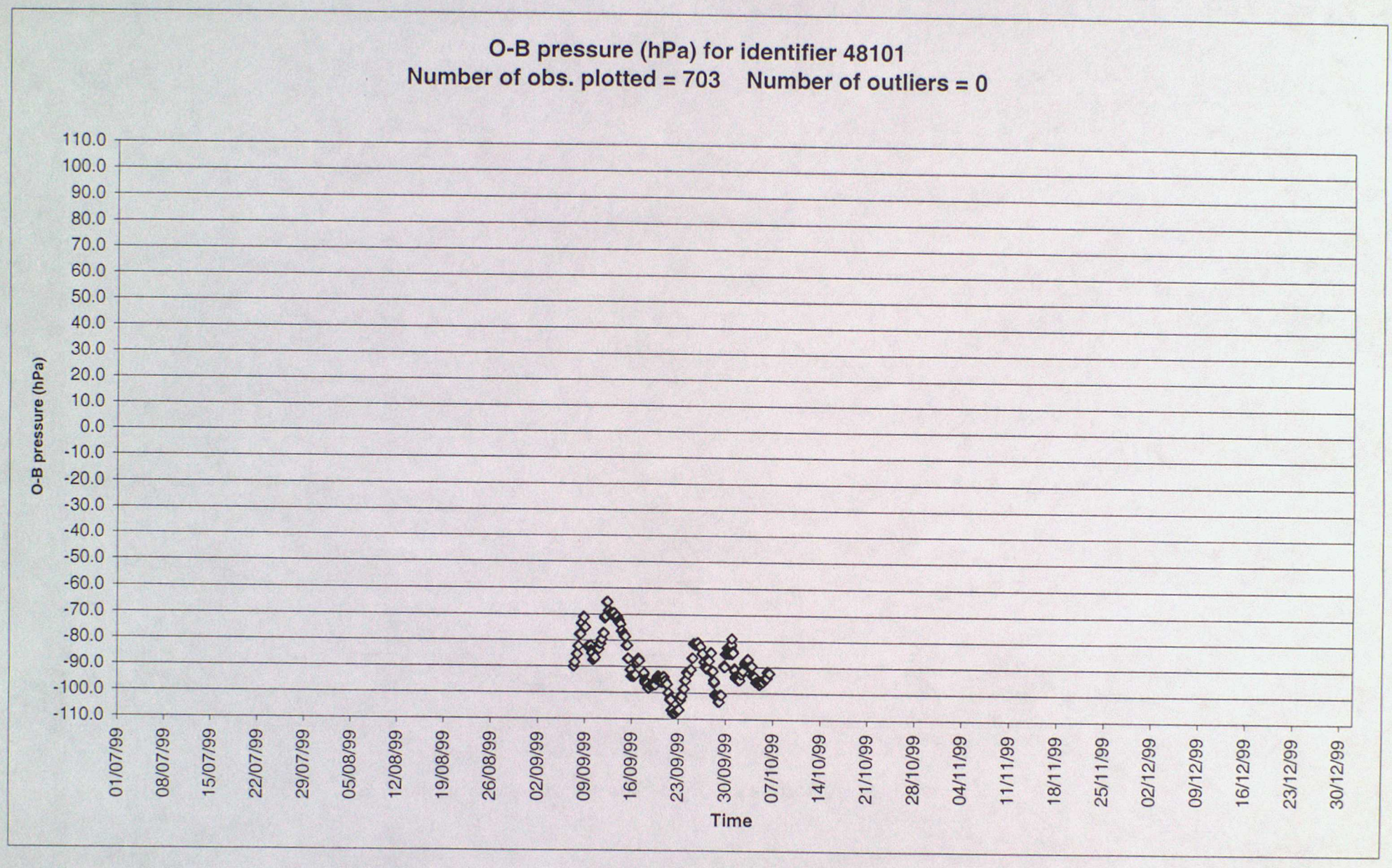

O-B pressure (hPa) for identifier 3FGN3
Number of obs. plotted = 126 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

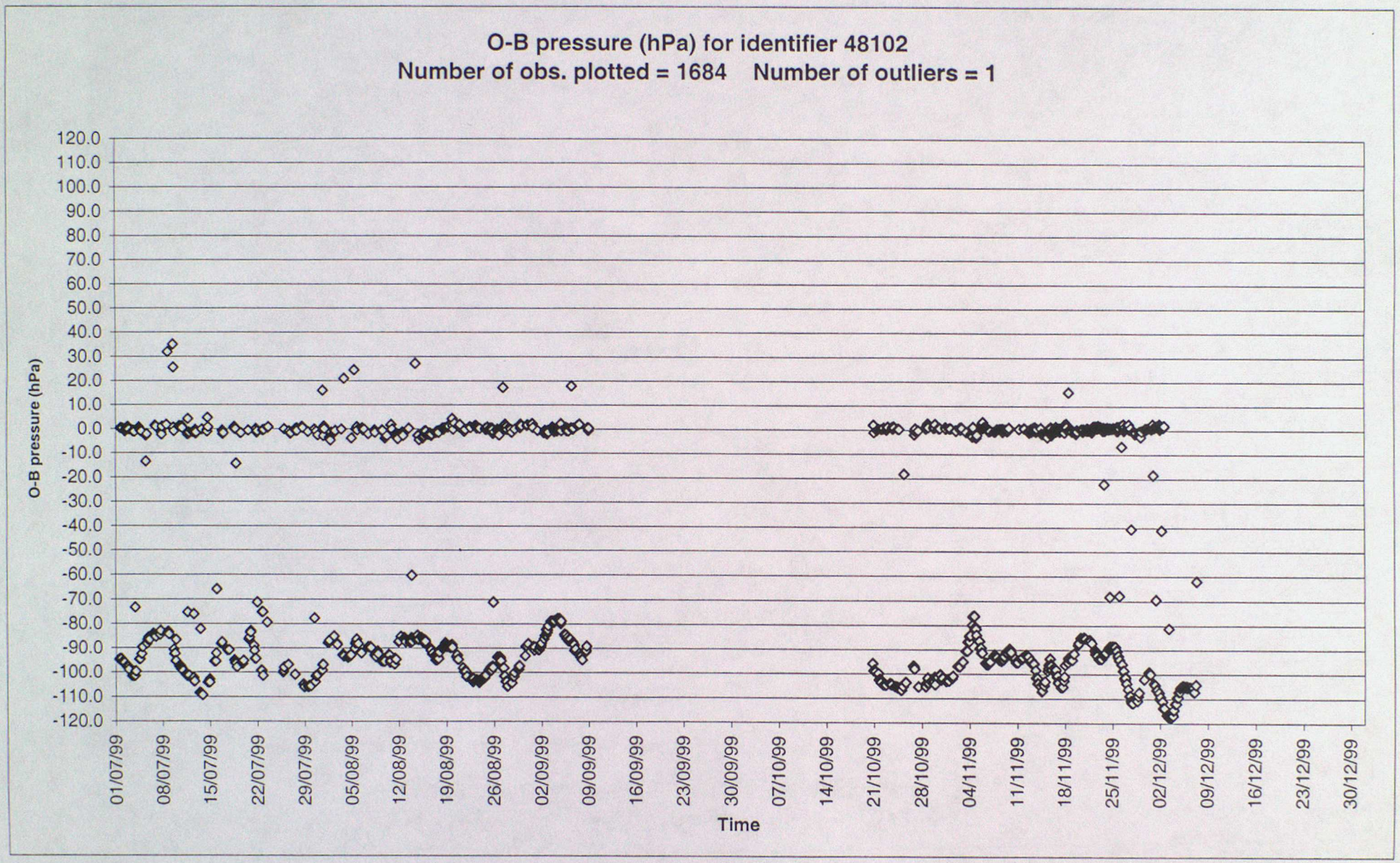

O-B pressure (hPa) for identifier 3FIC5
Number of obs. plotted = 55 Number of outliers = 6
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

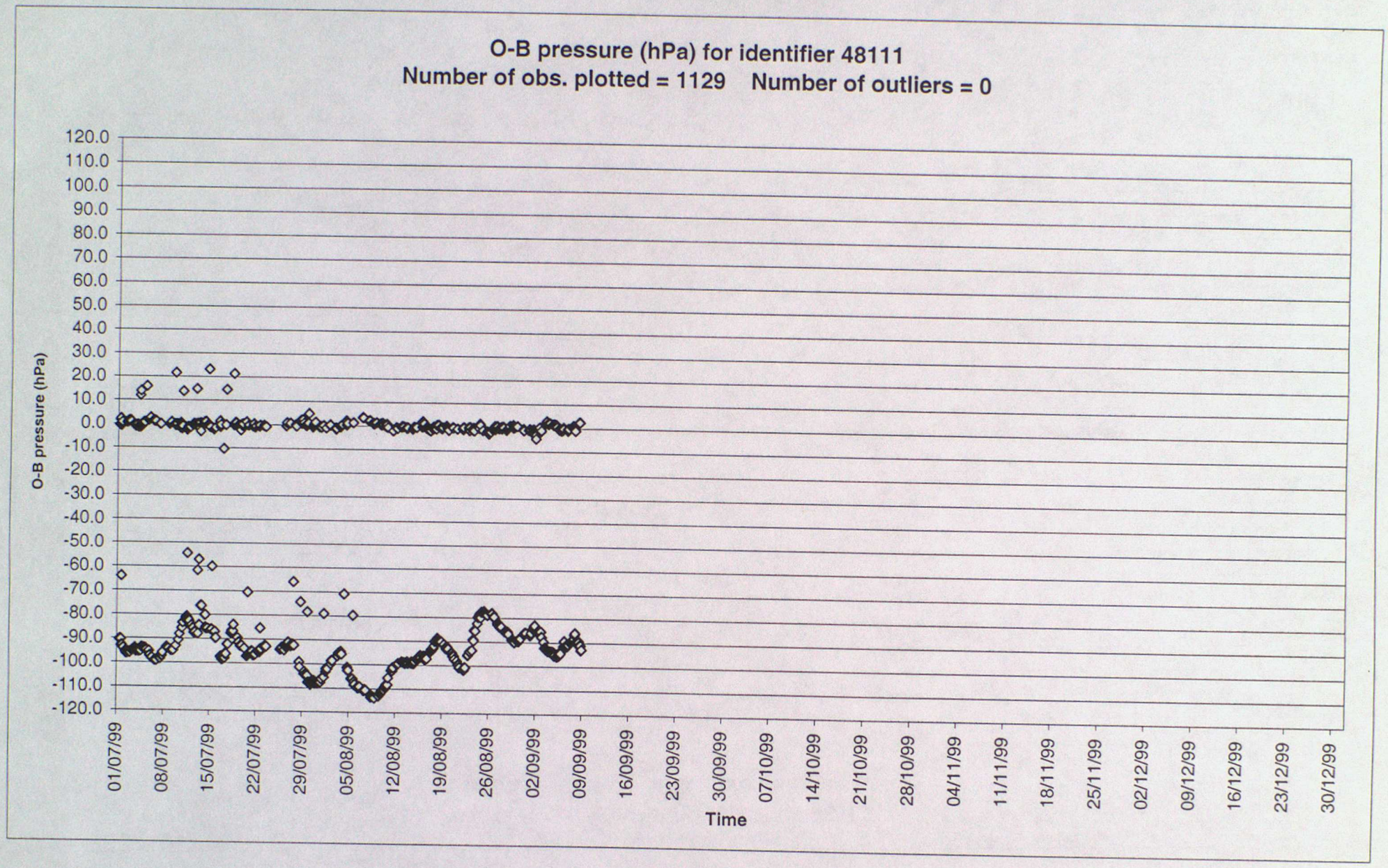

O-B pressure (hPa) for identifier 3FPA6
Number of obs. plotted = 159 Number of outliers = 0
O-B pressure (hPa)
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
-30.0
-35.0
-40.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

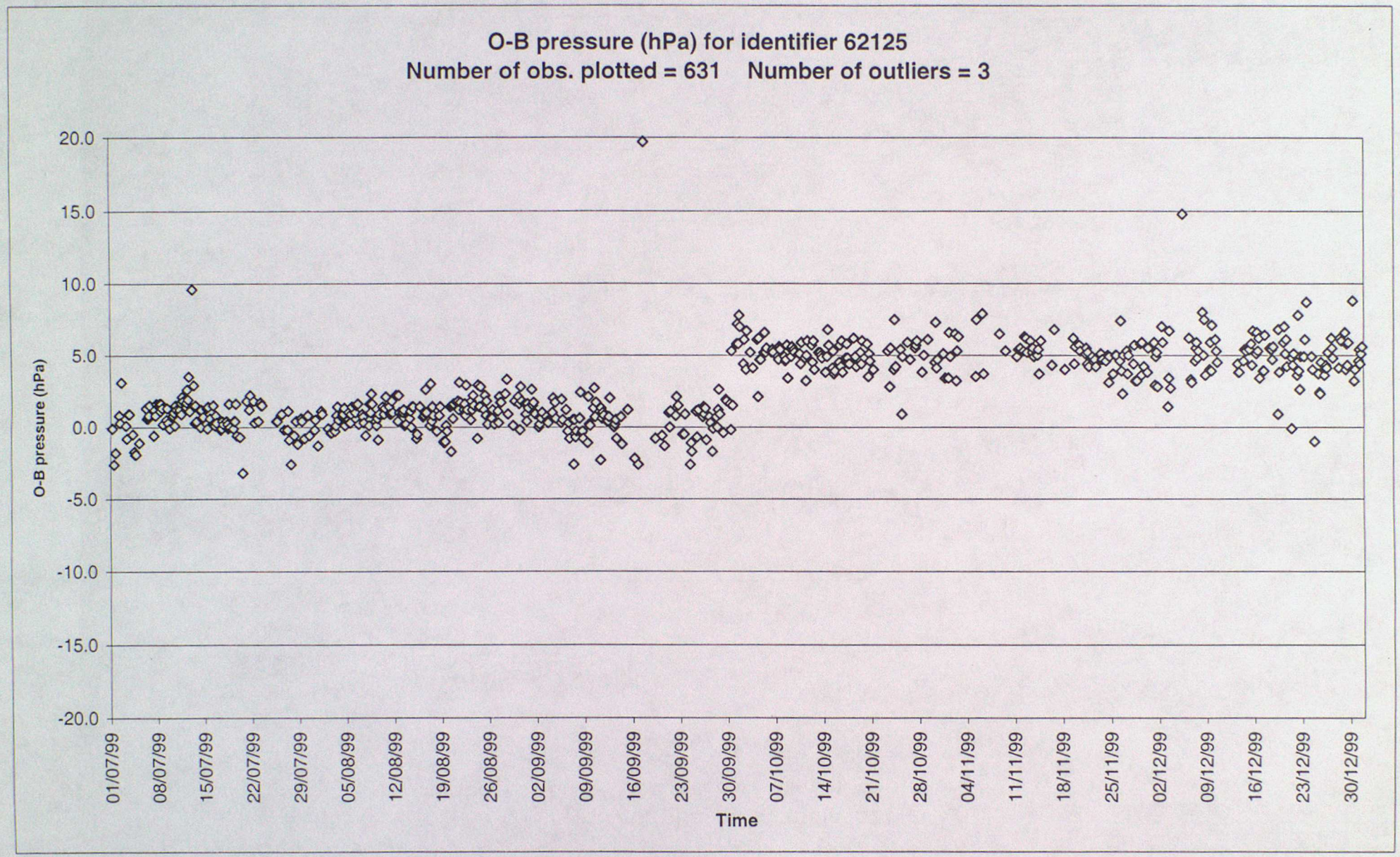

O-B pressure (hPa) for identifier 3FTL6
Number of obs. plotted = 45 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

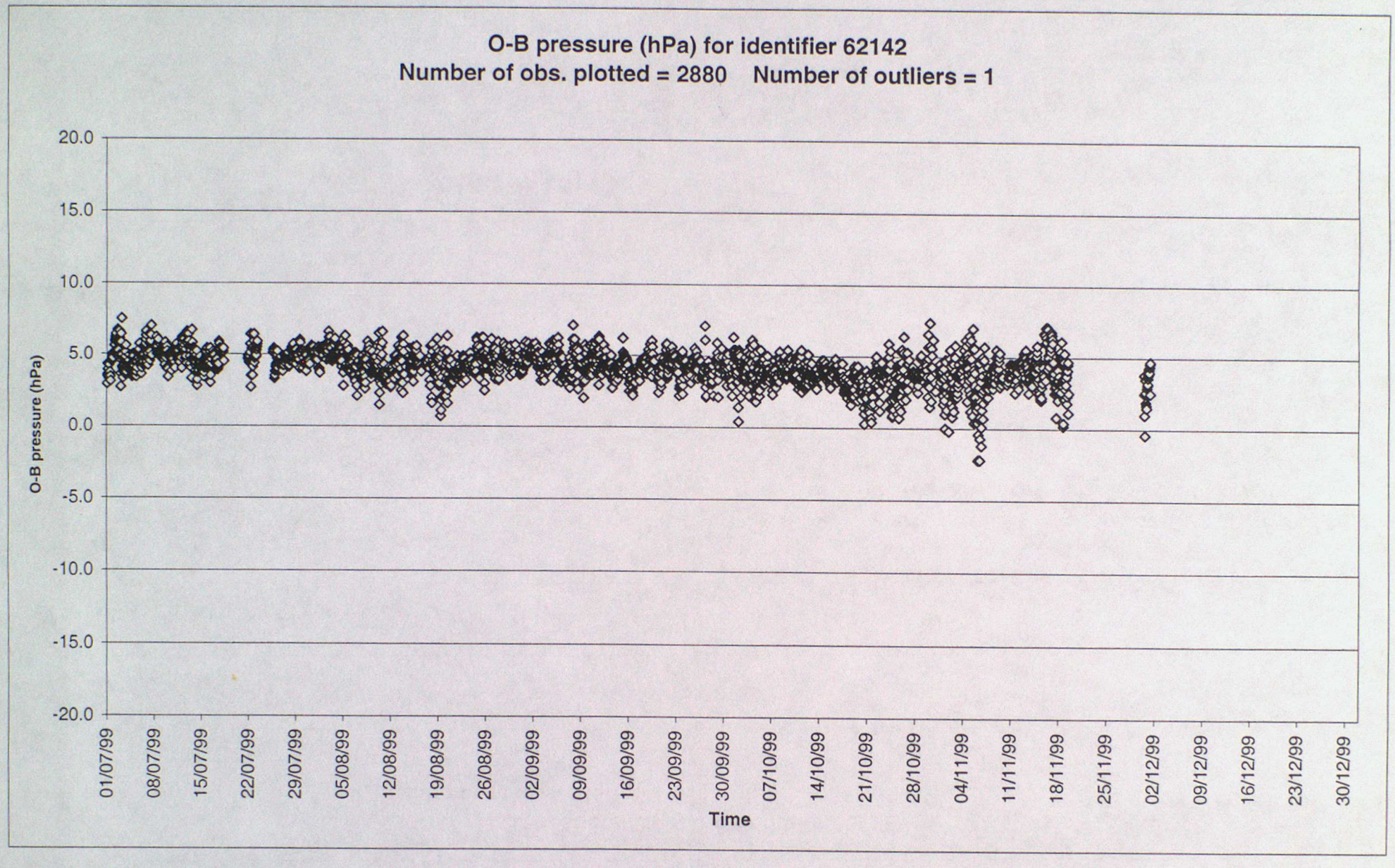

O-B pressure (hPa) for identifier 3FXT6
Number of obs. plotted = 89 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

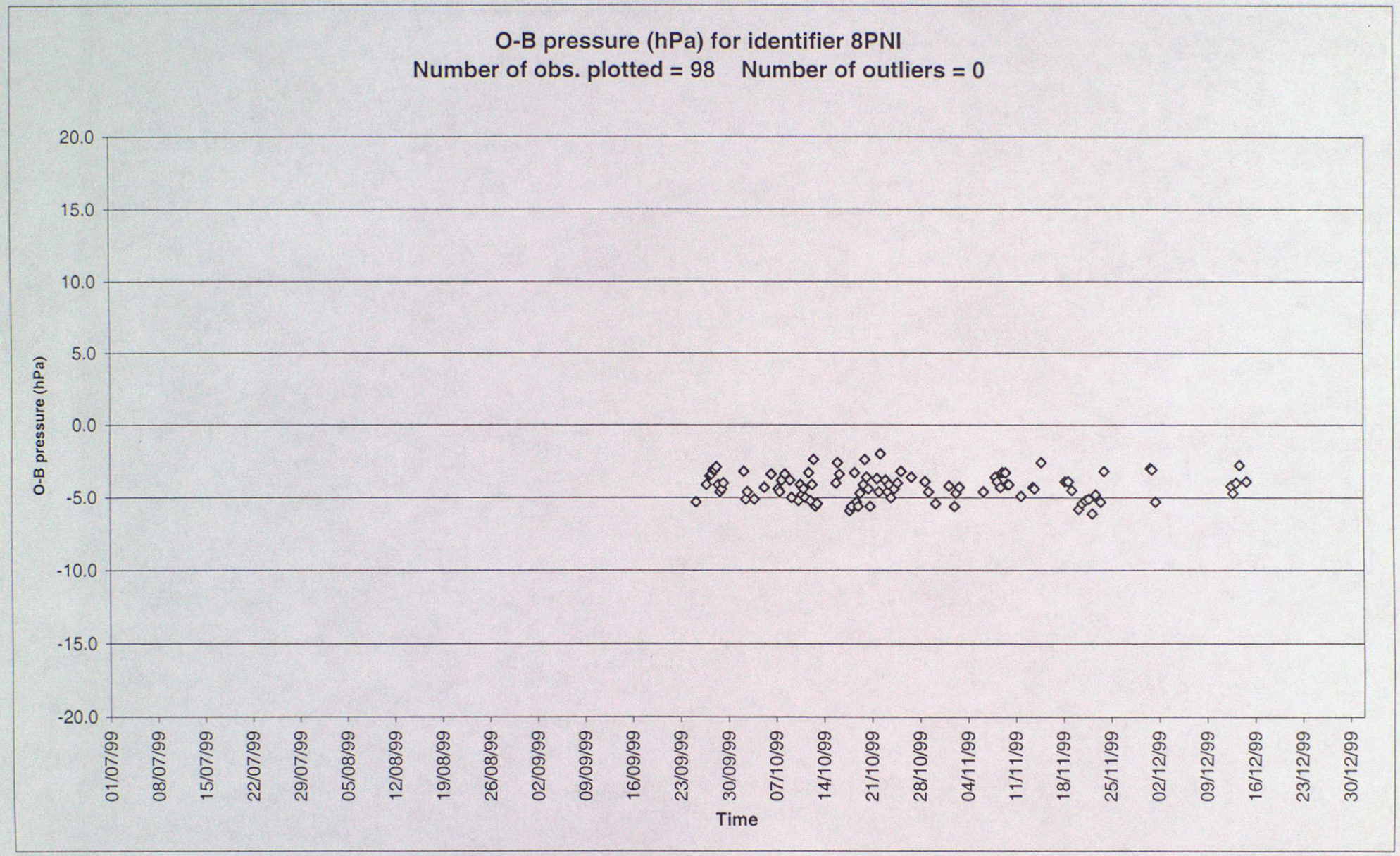

O-B pressure (hPa) for identifier 48101
Number of obs. plotted = 703 Number of outliers = 0
O-B pressure (hPa)
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

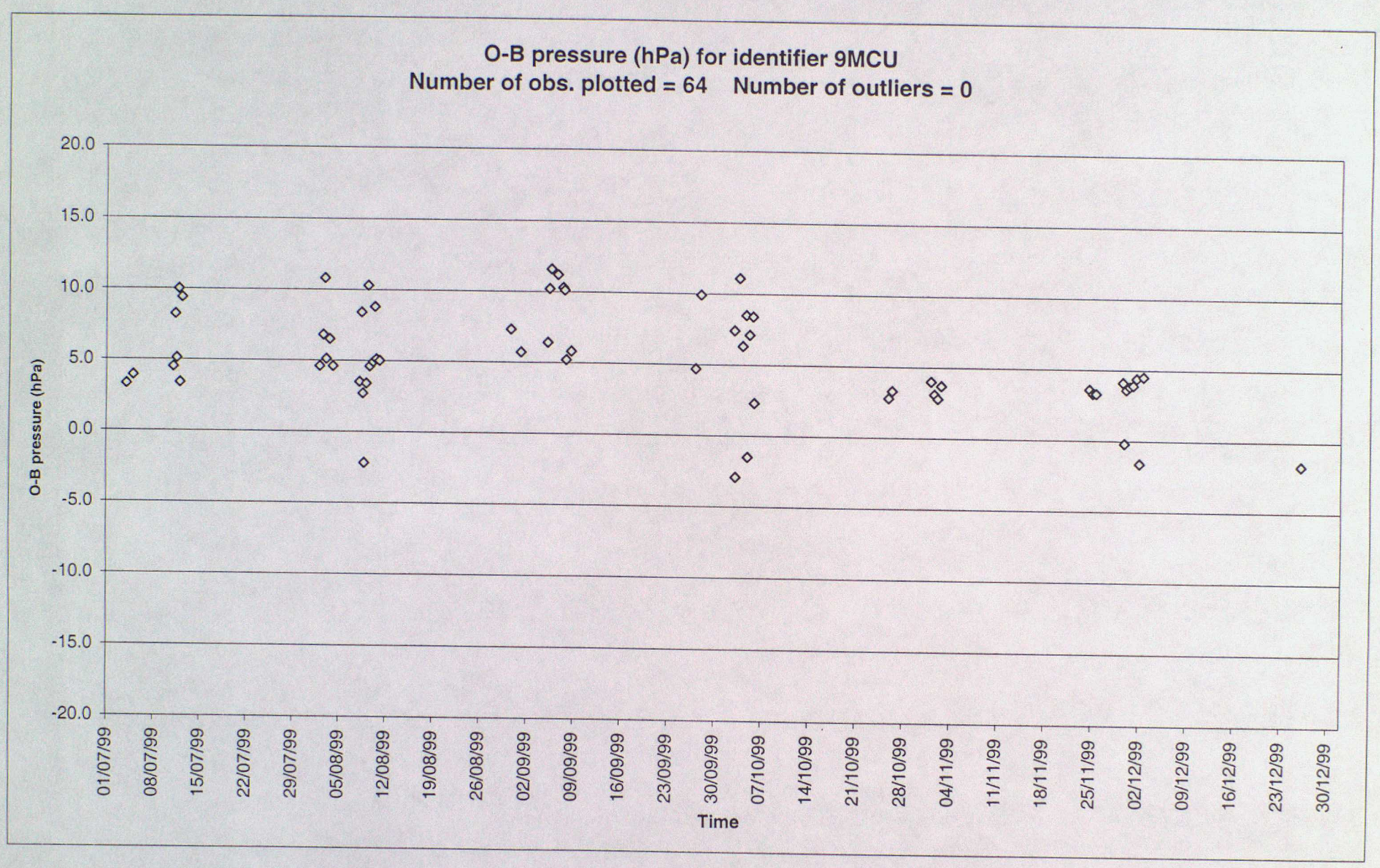

O-B pressure (hPa) for identifier 48102
Number of obs. plotted = 1684 Number of outliers = 1
O-B pressure (hPa)
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

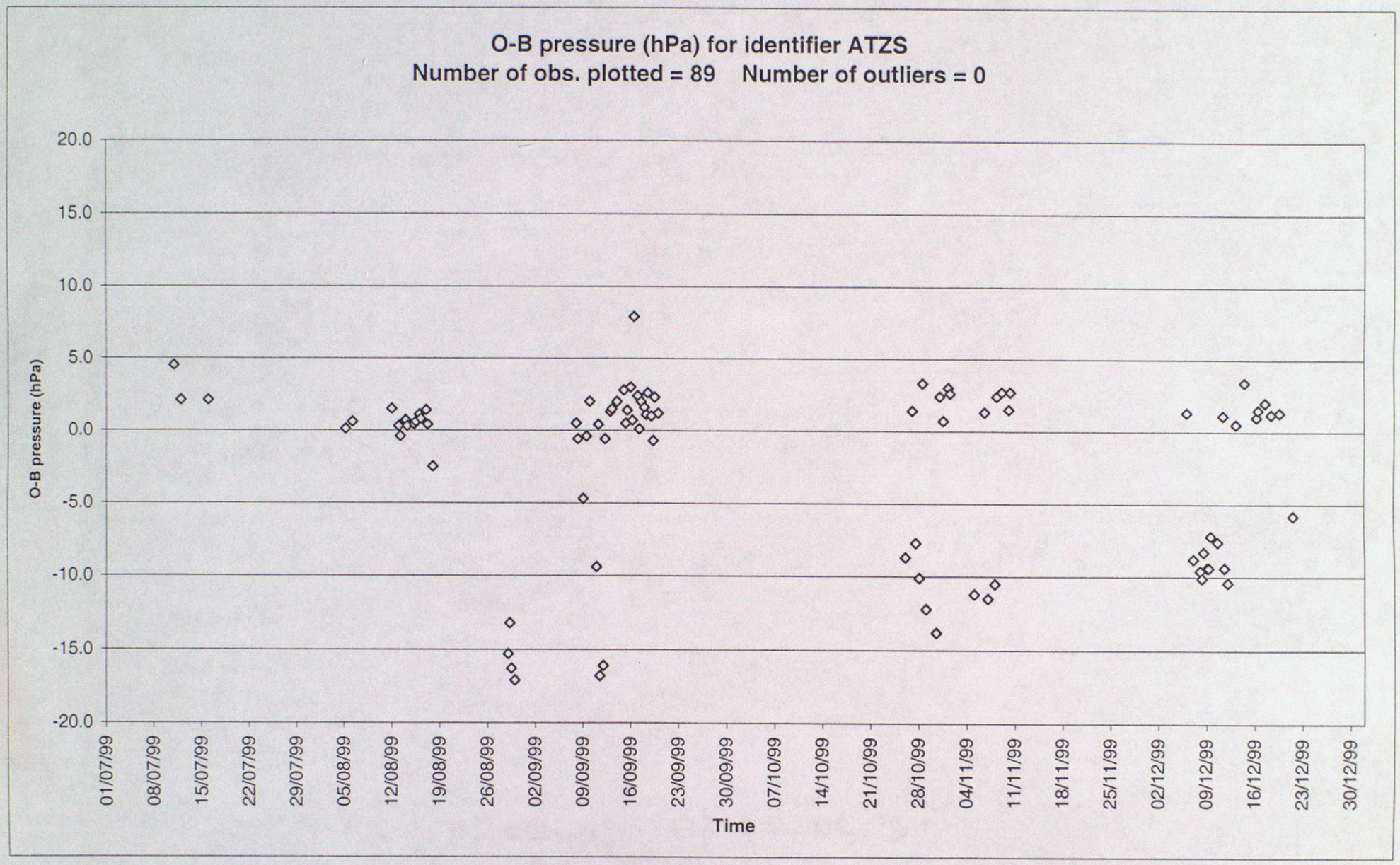

O-B pressure (hPa) for identifier 48111
Number of obs. plotted = 1129 Number of outliers = 0
O-B pressure (hPa)
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
-120.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

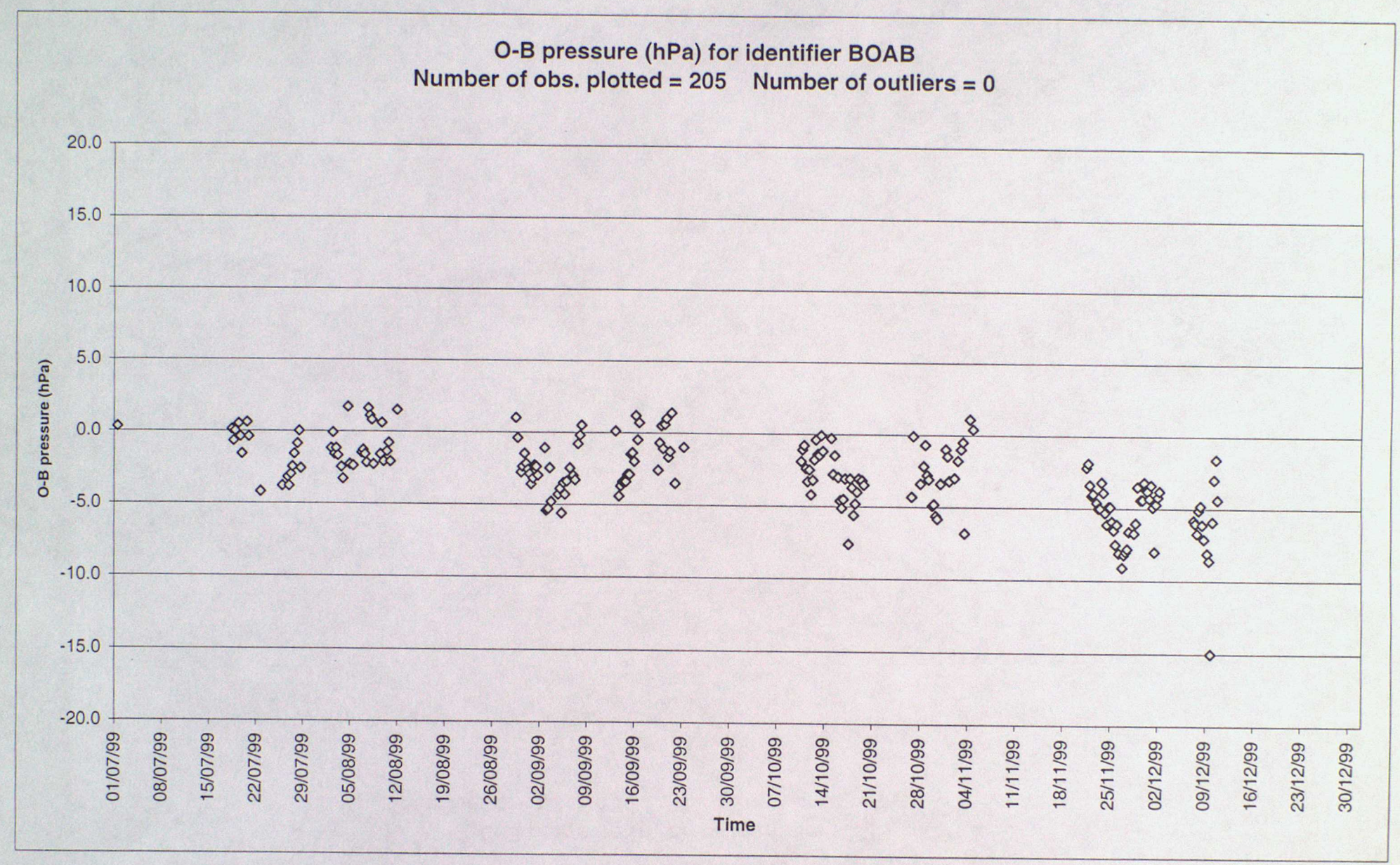

O-B pressure (hPa) for identifier 62125
Number of obs. plotted = 631 Number of outliers = 3
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

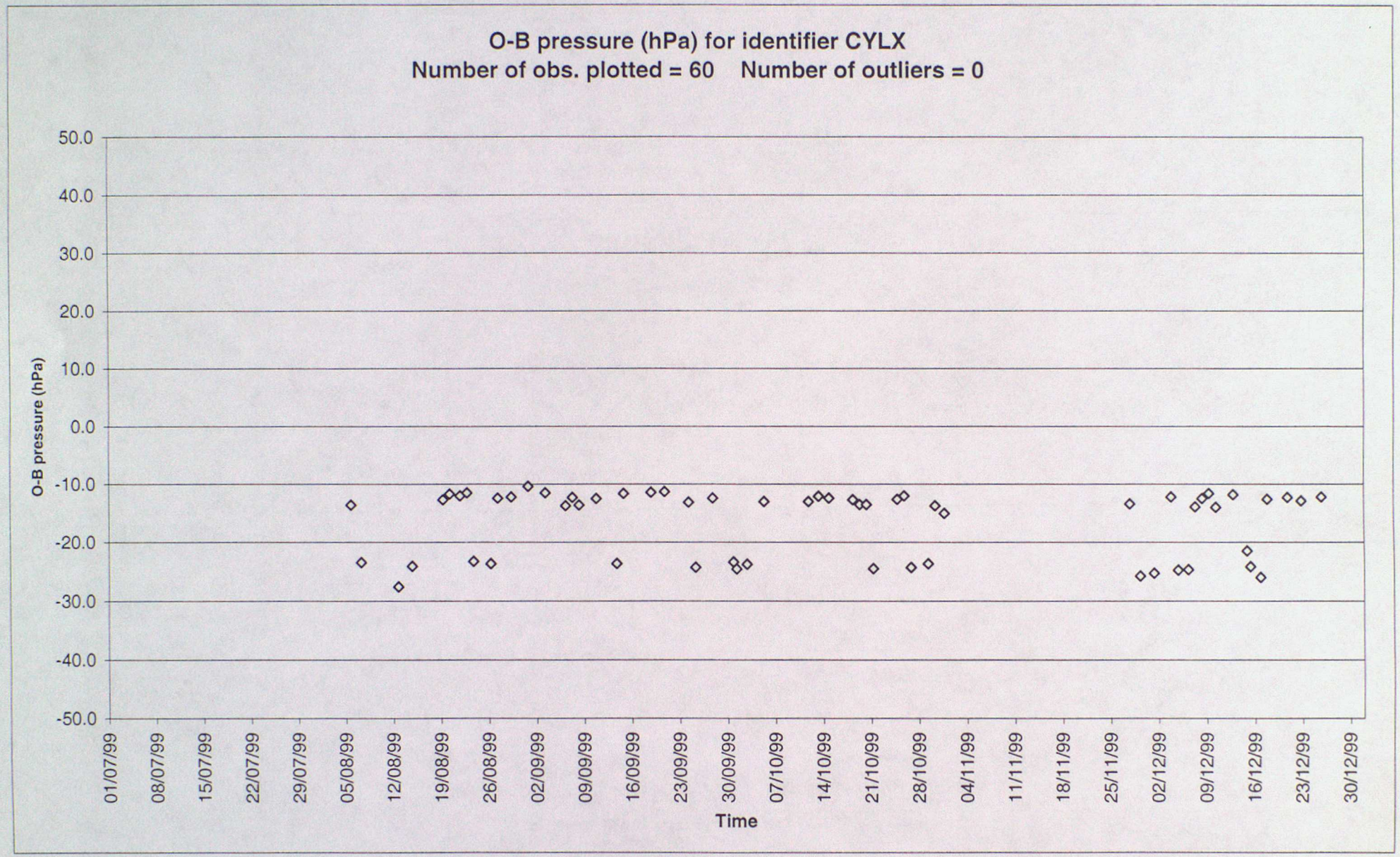

O-B pressure (hPa) for identifier 62142
Number of obs. plotted = 2880 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

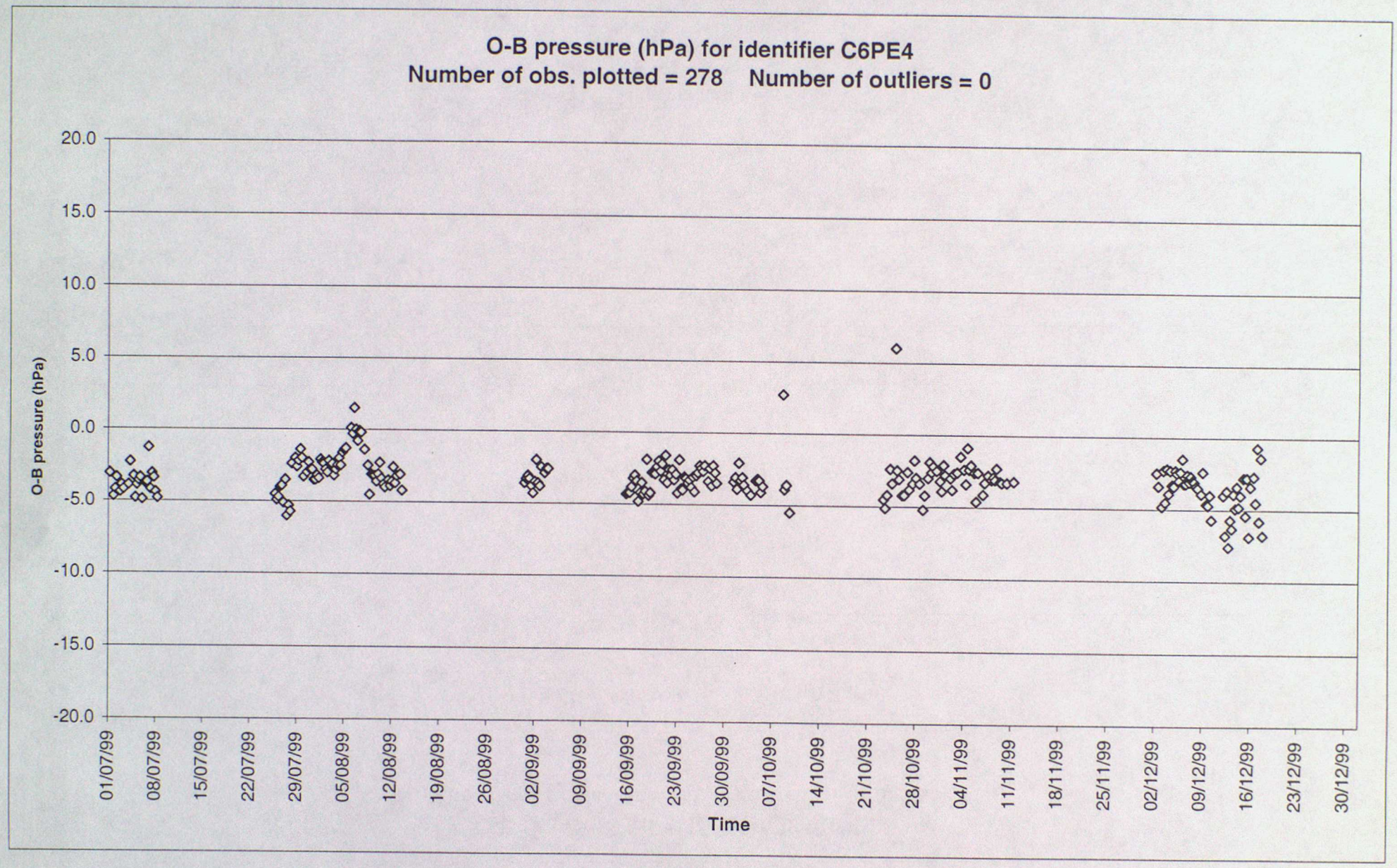

O-B pressure (hPa) for identifier 8PNI
Number of obs. plotted = 98 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

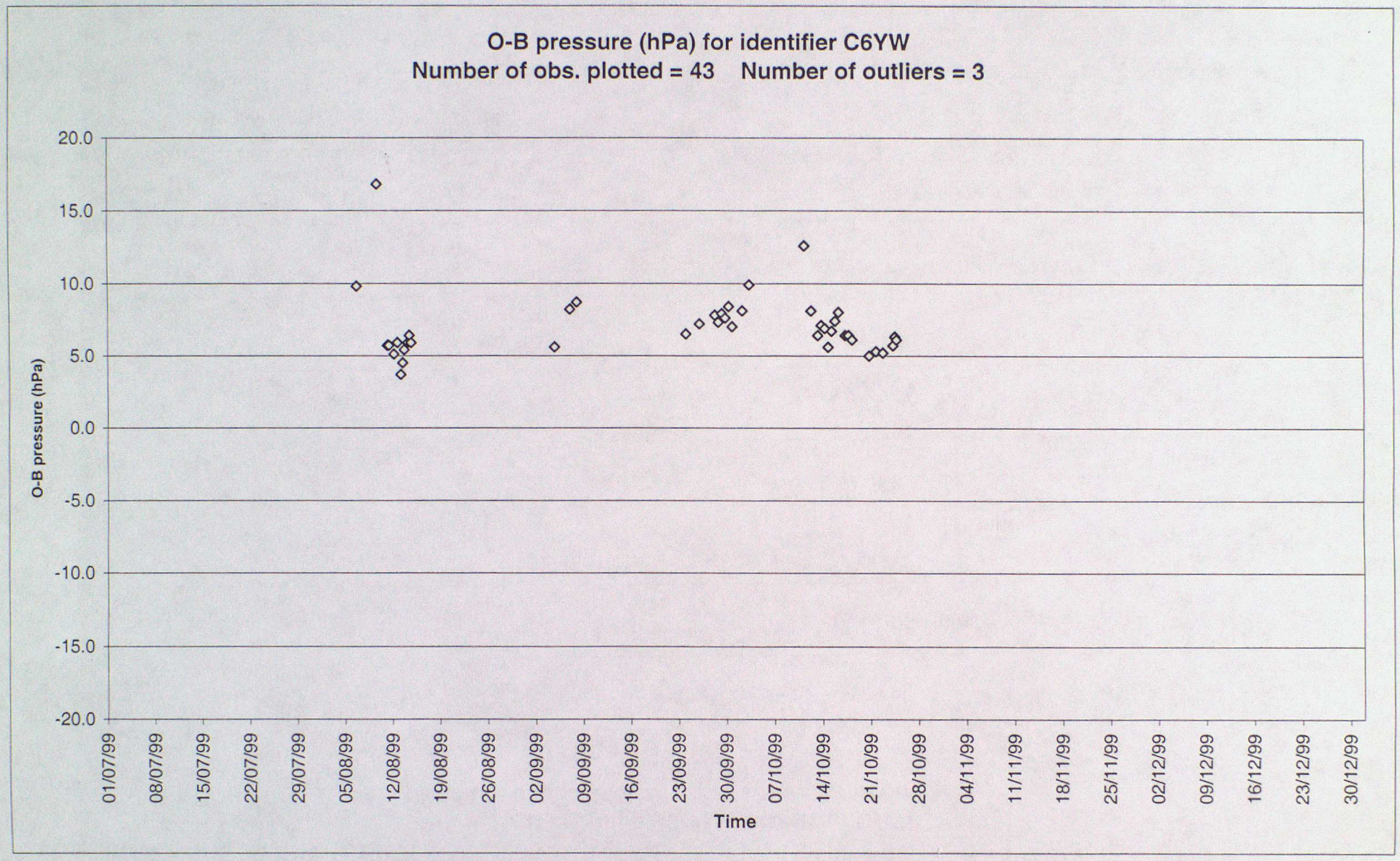

O-B pressure (hPa) for identifier 9MCU
Number of obs. plotted = 64 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

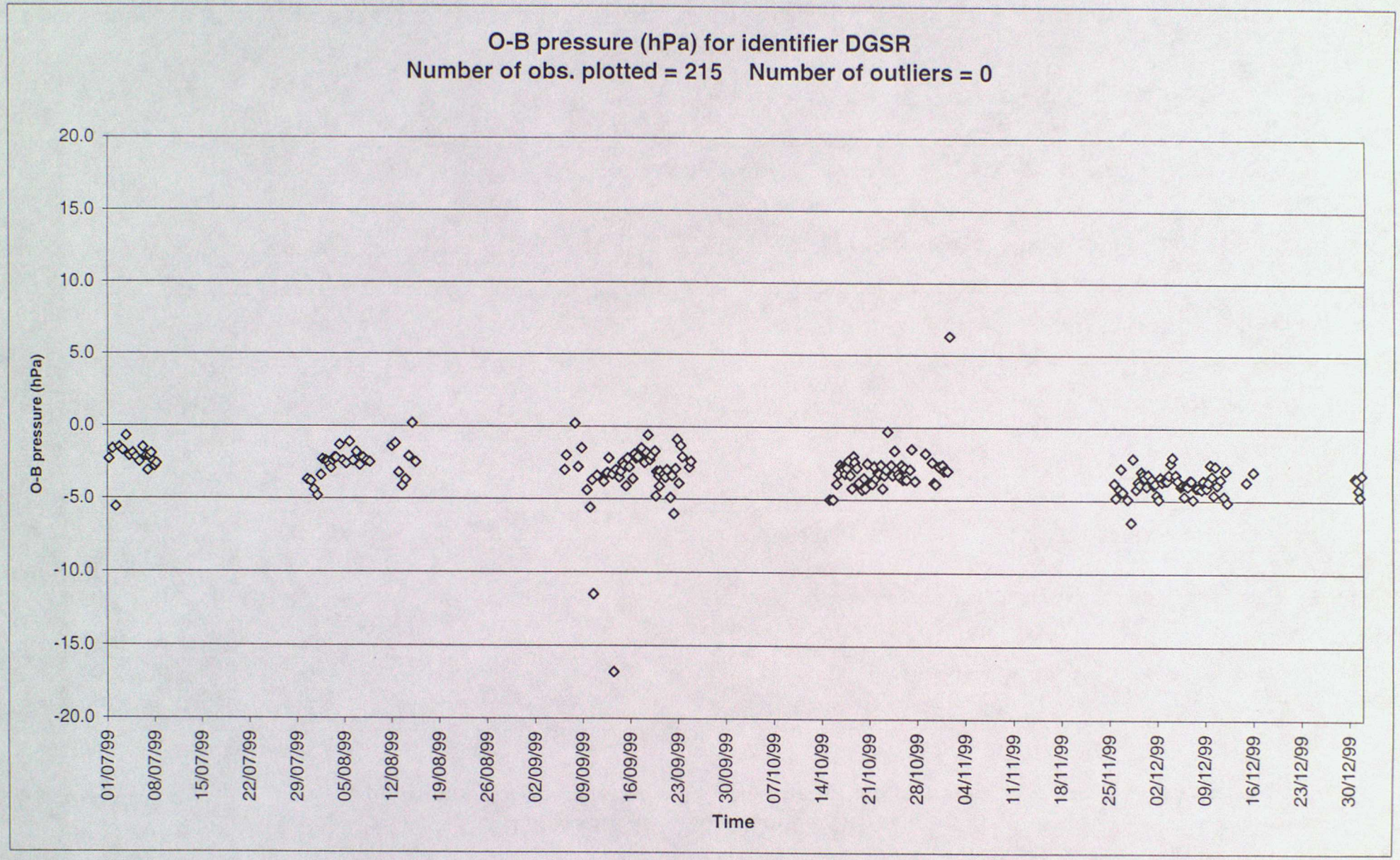

O-B pressure (hPa) for identifier ATZS
Number of obs. plotted = 89 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

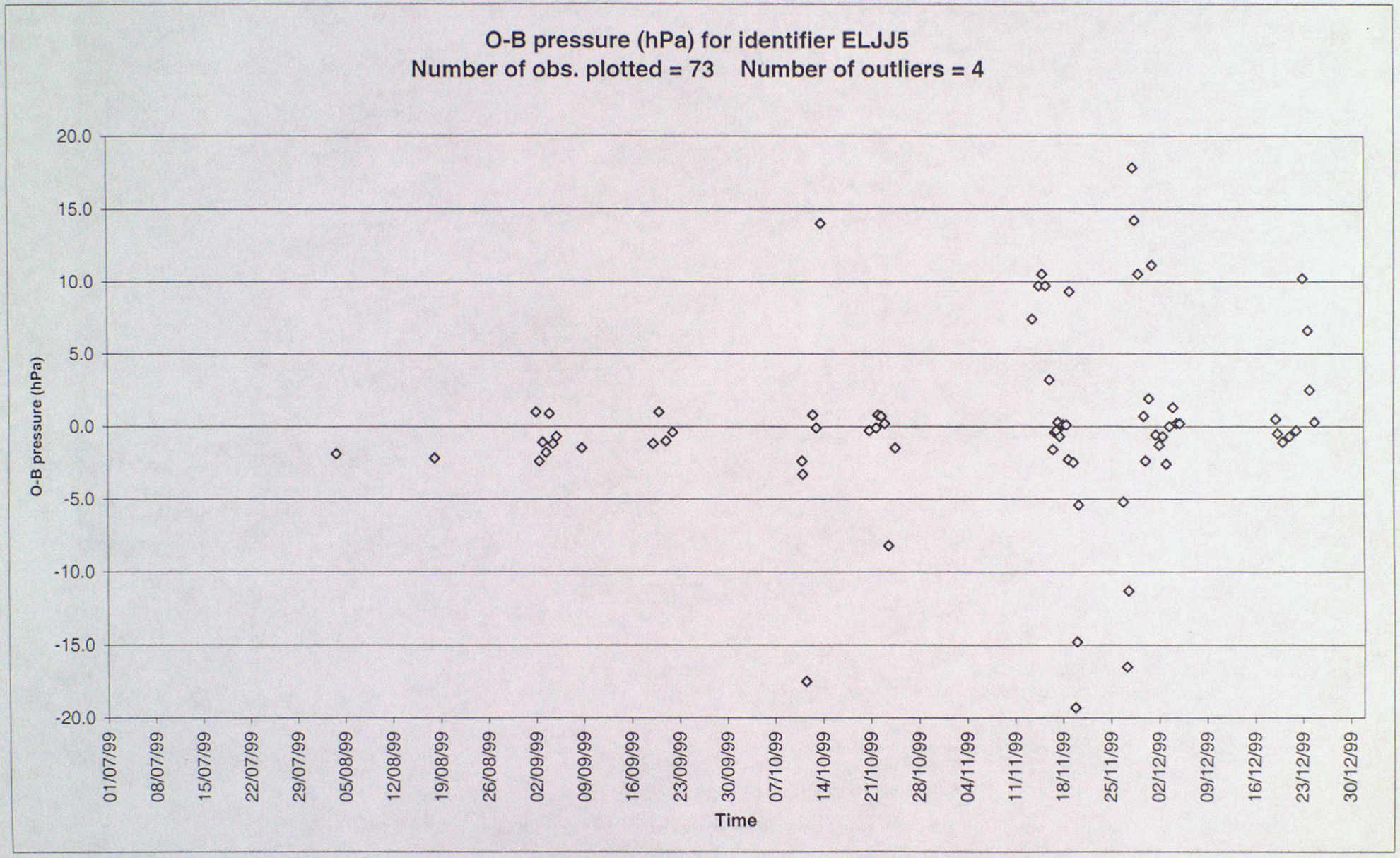

O-B pressure (hPa) for identifier BOAB
Number of obs. plotted = 205 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

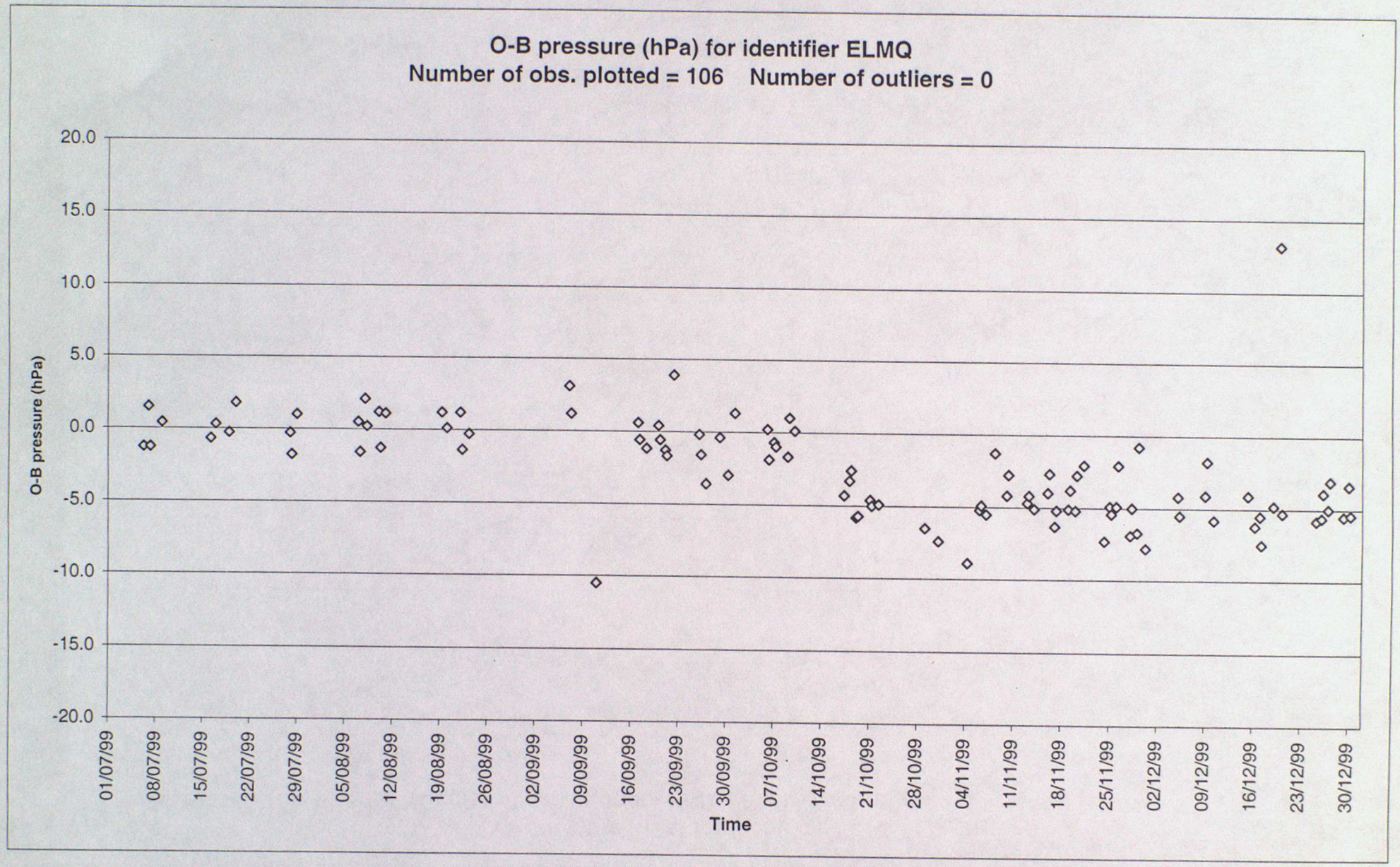

O-B pressure (hPa) for identifier CYLX
Number of obs. plotted = 60 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

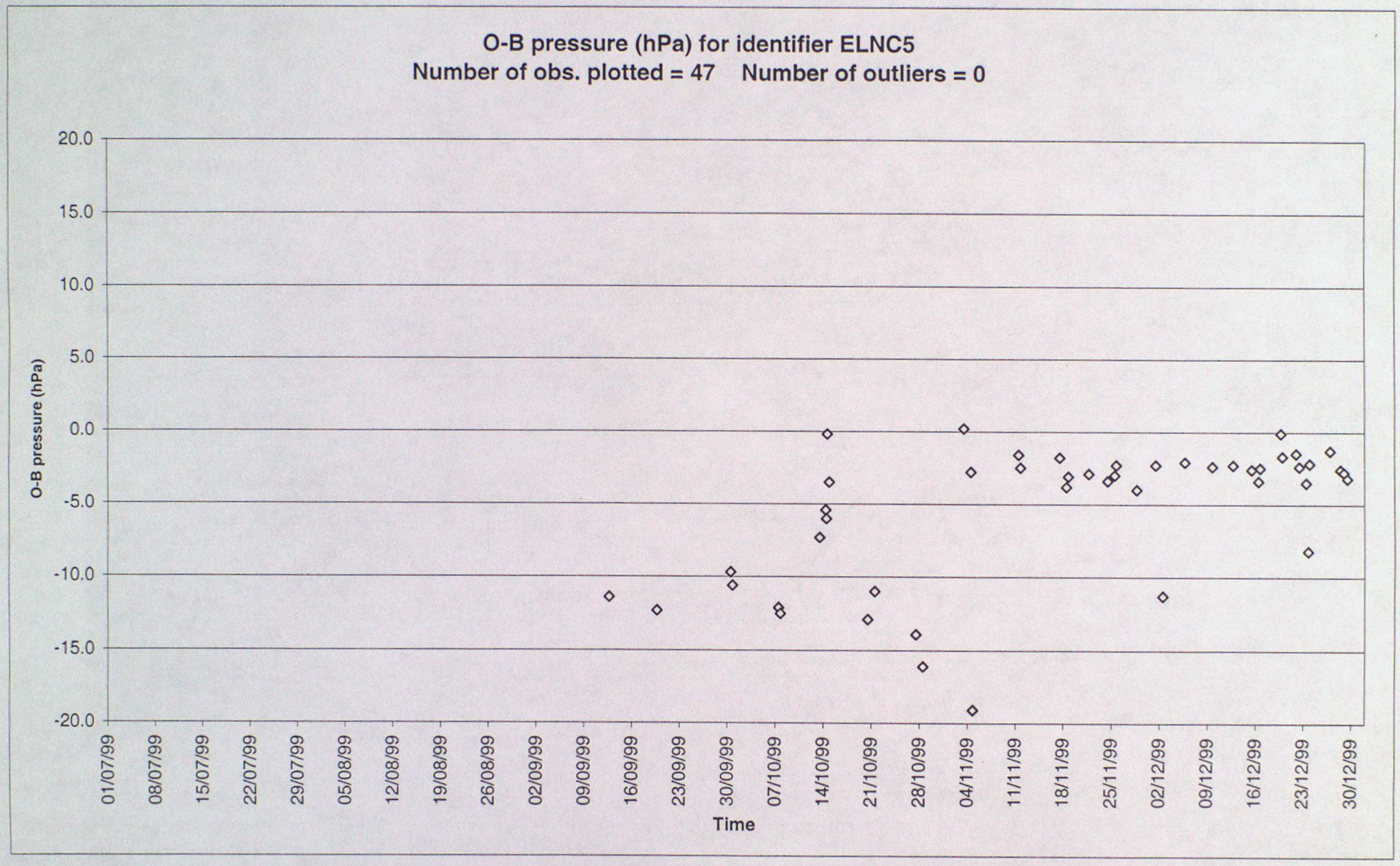

O-B pressure (hPa) for identifier C6PE4
Number of obs. plotted = 278 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

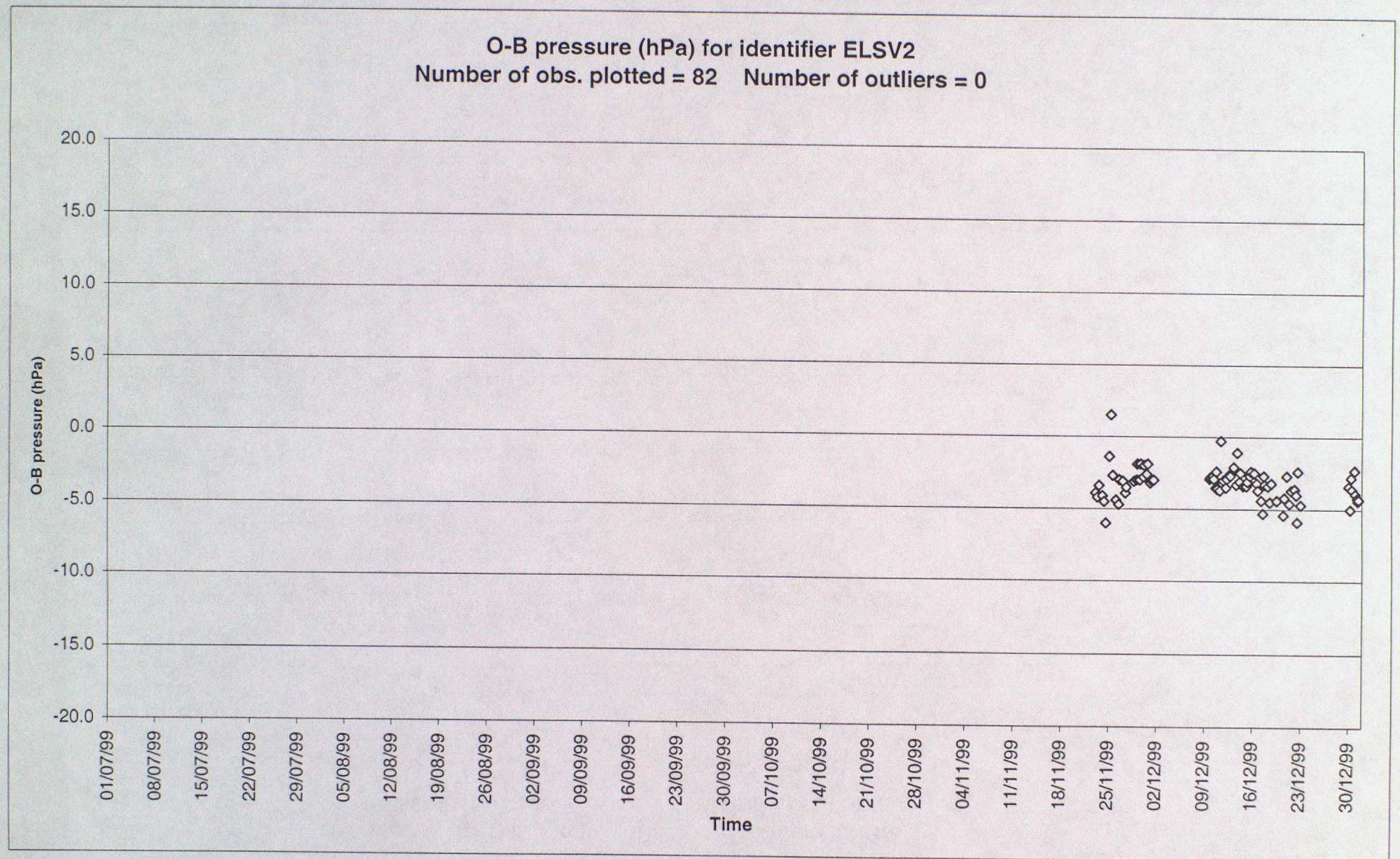

O-B pressure (hPa) for identifier C6YW
Number of obs. plotted = 43 Number of outliers = 3
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
O-B pressure (hPa)
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

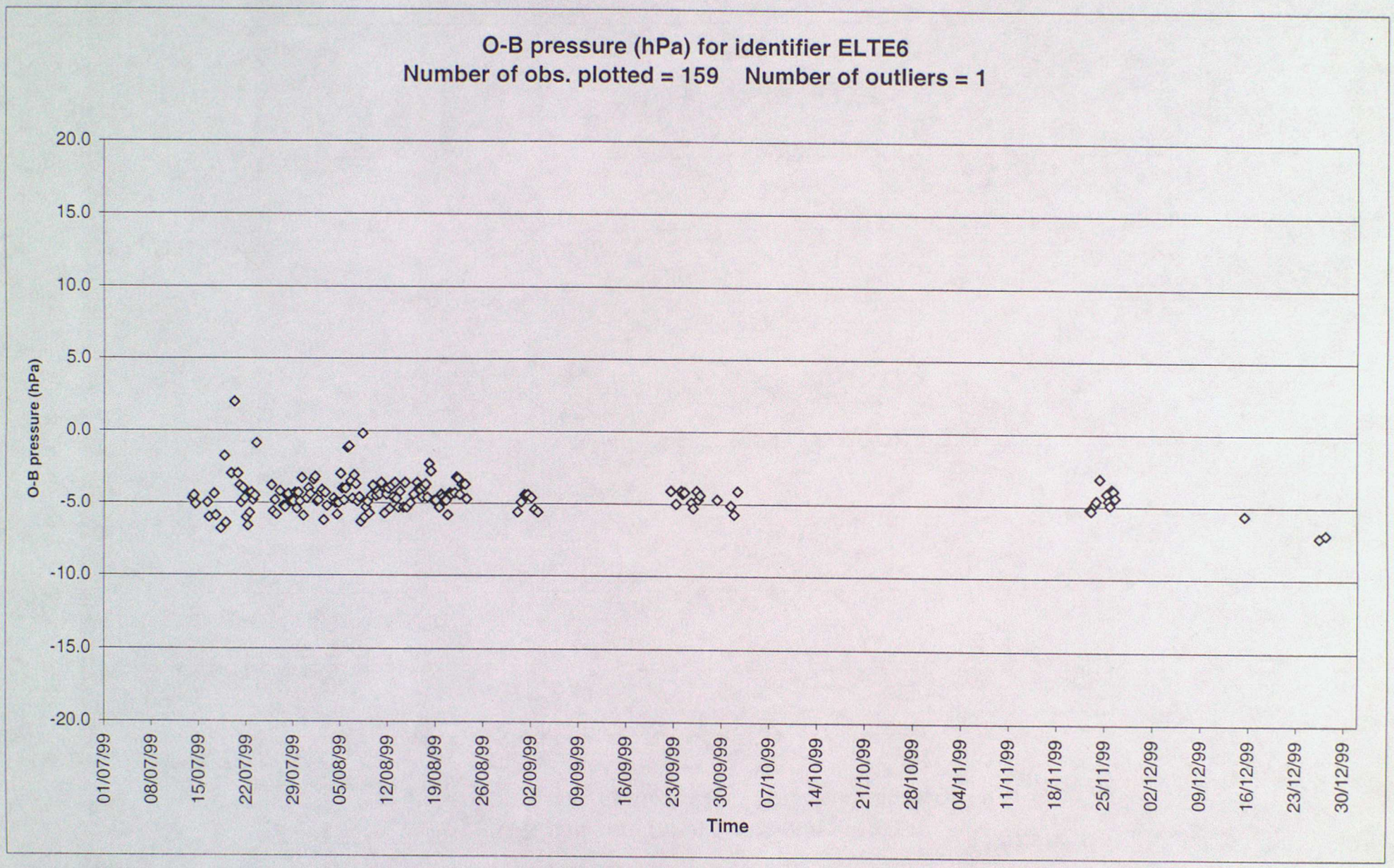

O-B pressure (hPa) for identifier DGSR
Number of obs. plotted = 215 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

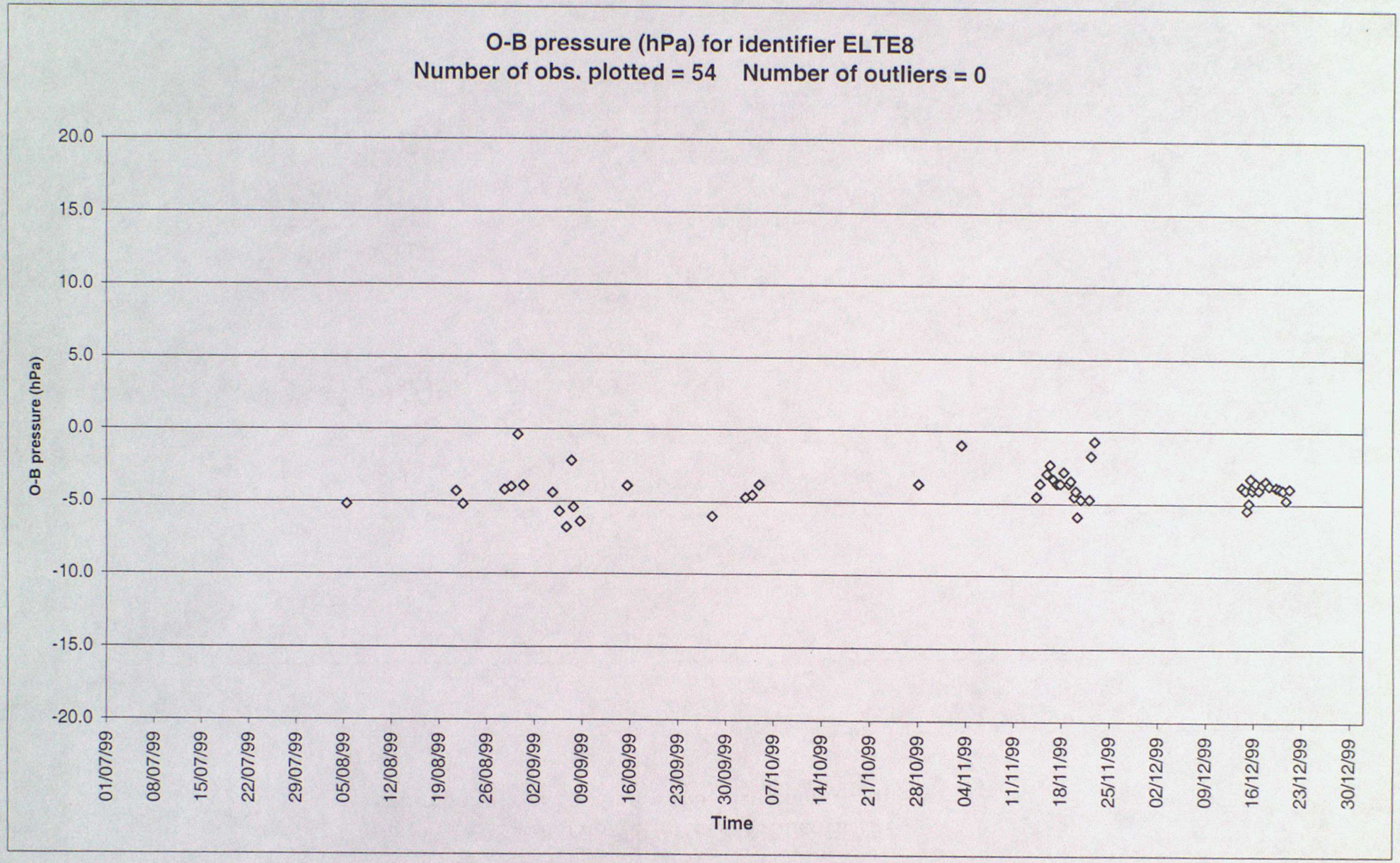

O-B pressure (hPa) for identifier ELJJ5
Number of obs. plotted = 73 Number of outliers = 4
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

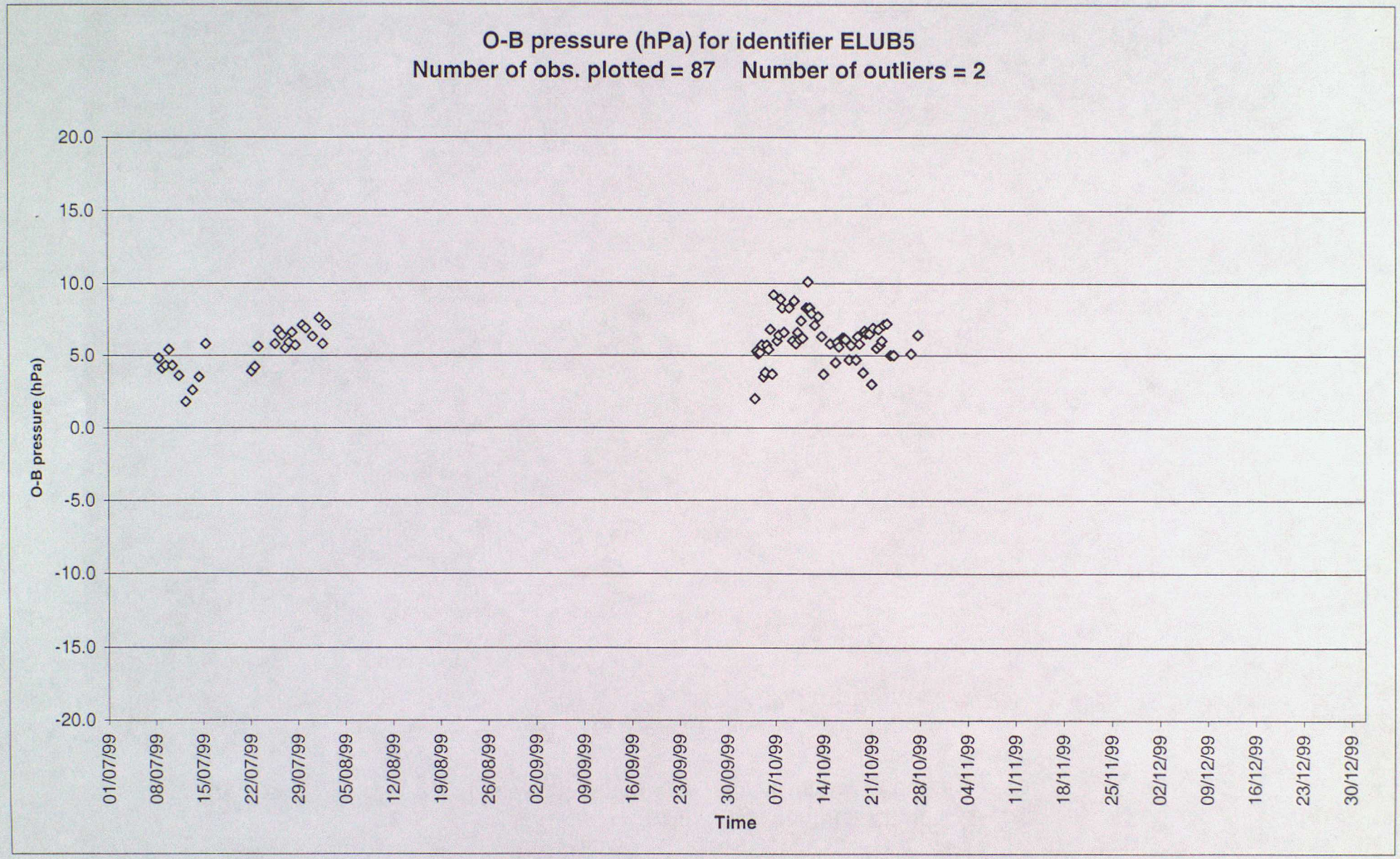

O-B pressure (hPa) for identifier ELMQ
Number of obs. plotted = 106 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

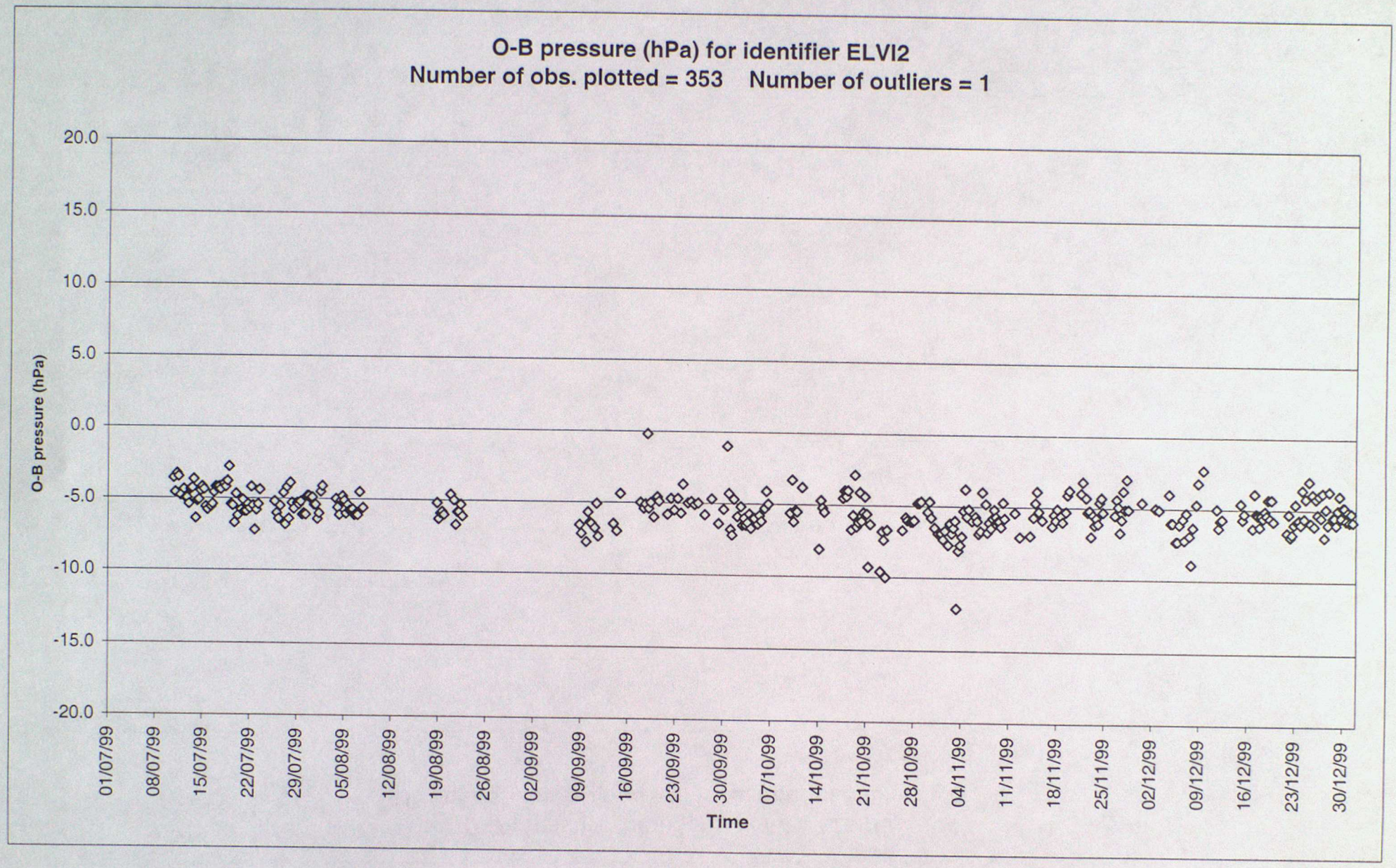

O-B pressure (hPa) for identifier ELNC5
Number of obs. plotted = 47 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

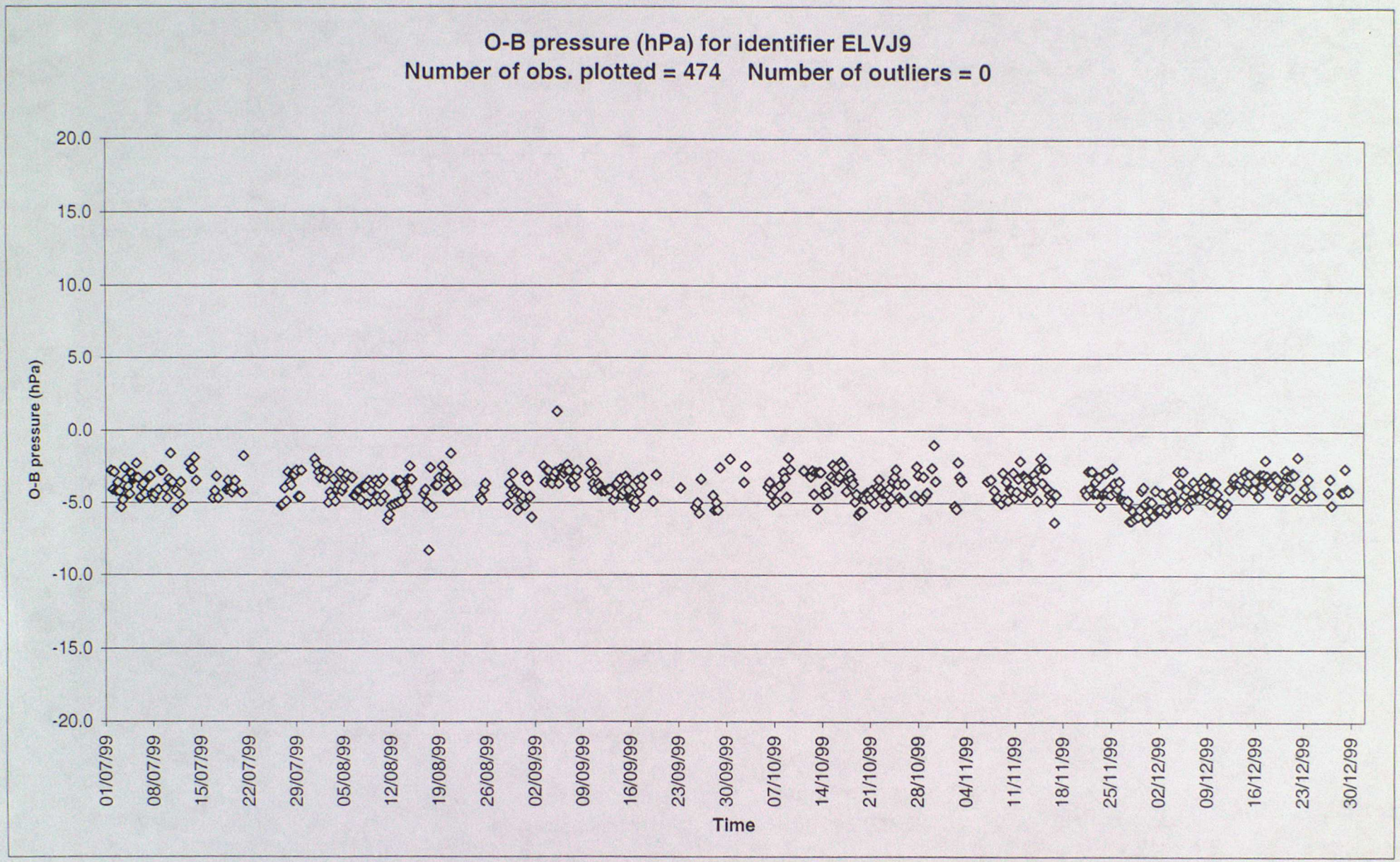

O-B pressure (hPa) for identifier ELSV2
Number of obs. plotted = 82 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

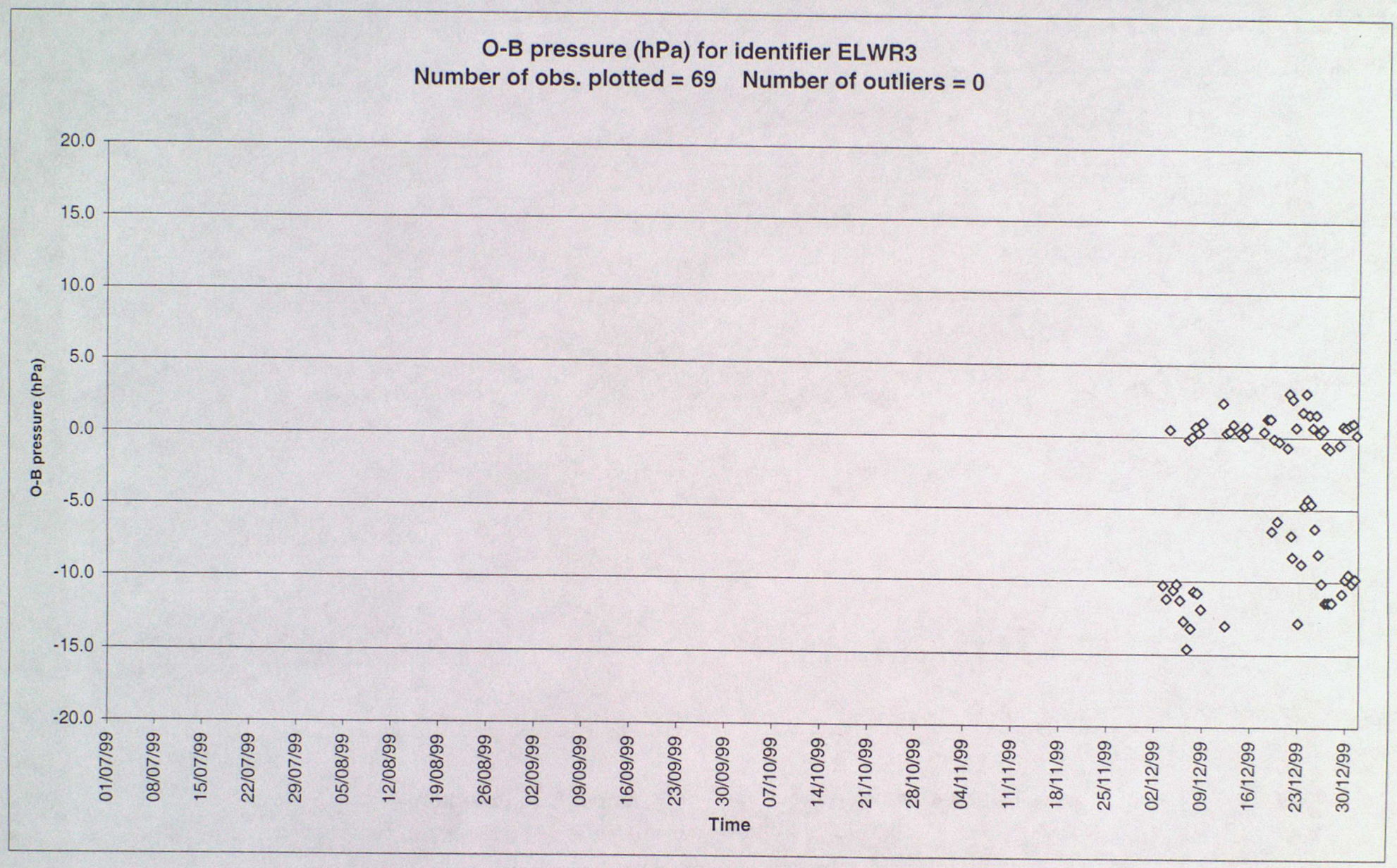

O-B pressure (hPa) for identifier ELTE6
Number of obs. plotted = 159 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

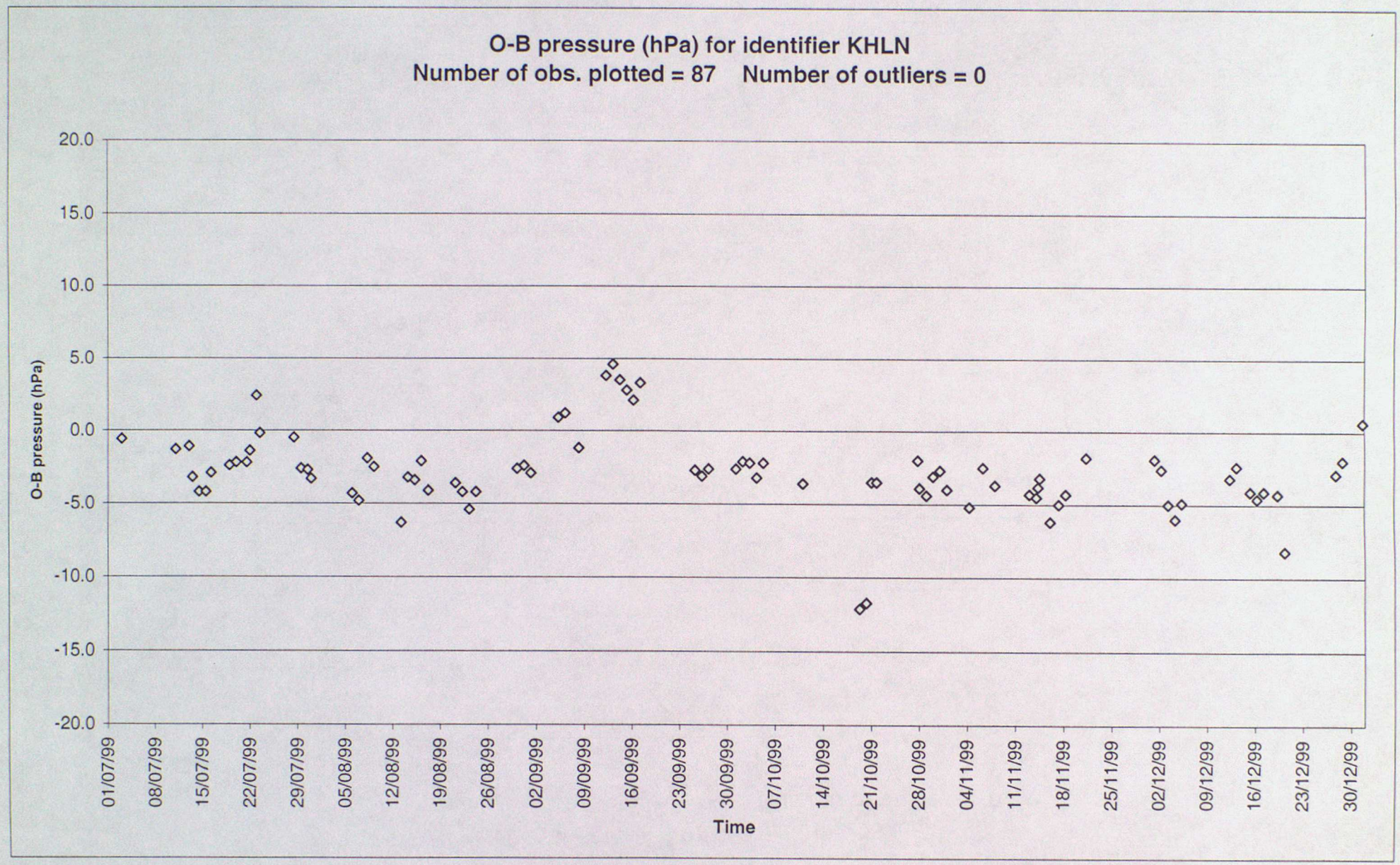

O-B pressure (hPa) for identifier ELTE8
Number of obs. plotted = 54 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

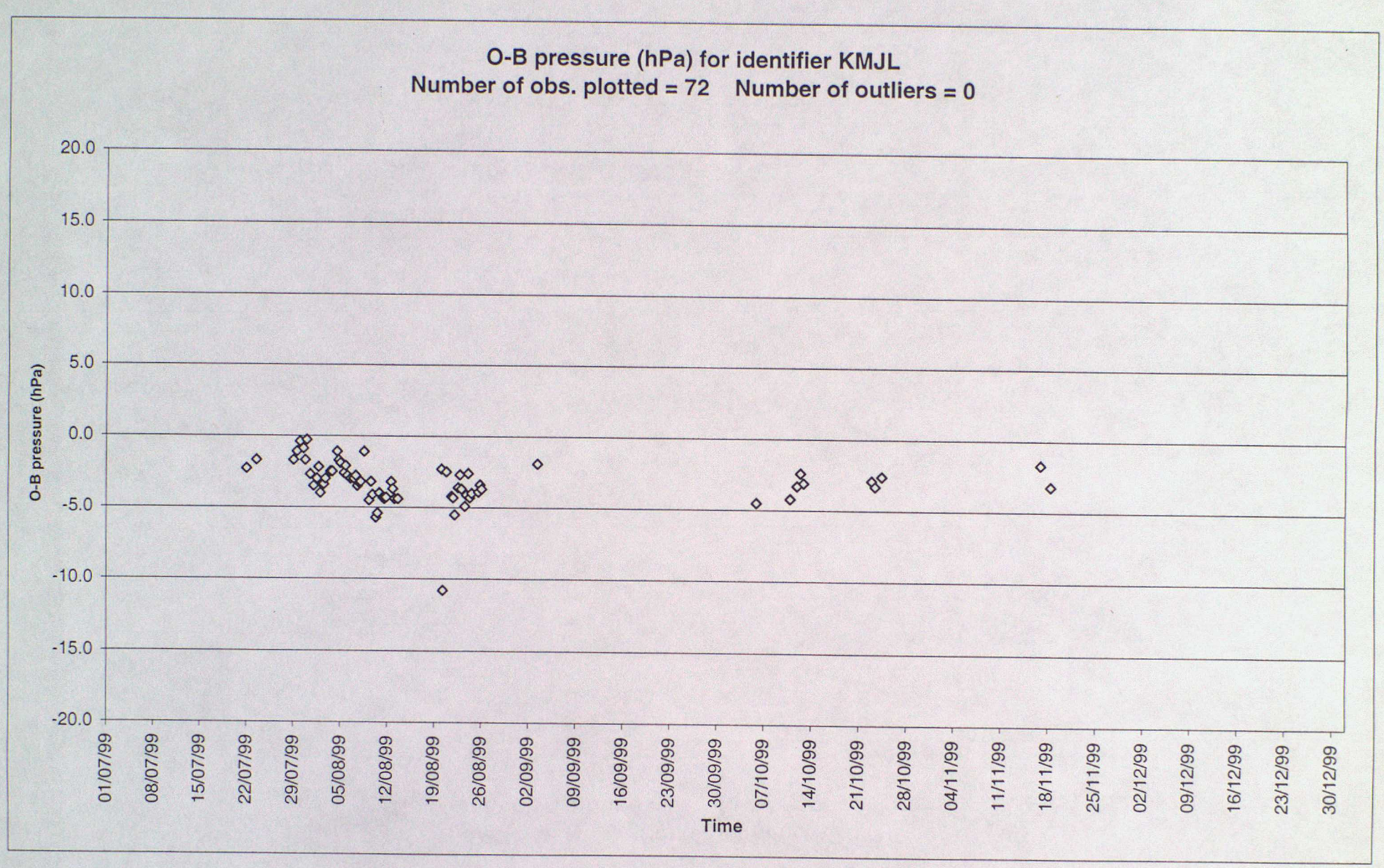

O-B pressure (hPa) for identifier ELUB5
Number of obs. plotted = 87 Number of outliers = 2
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

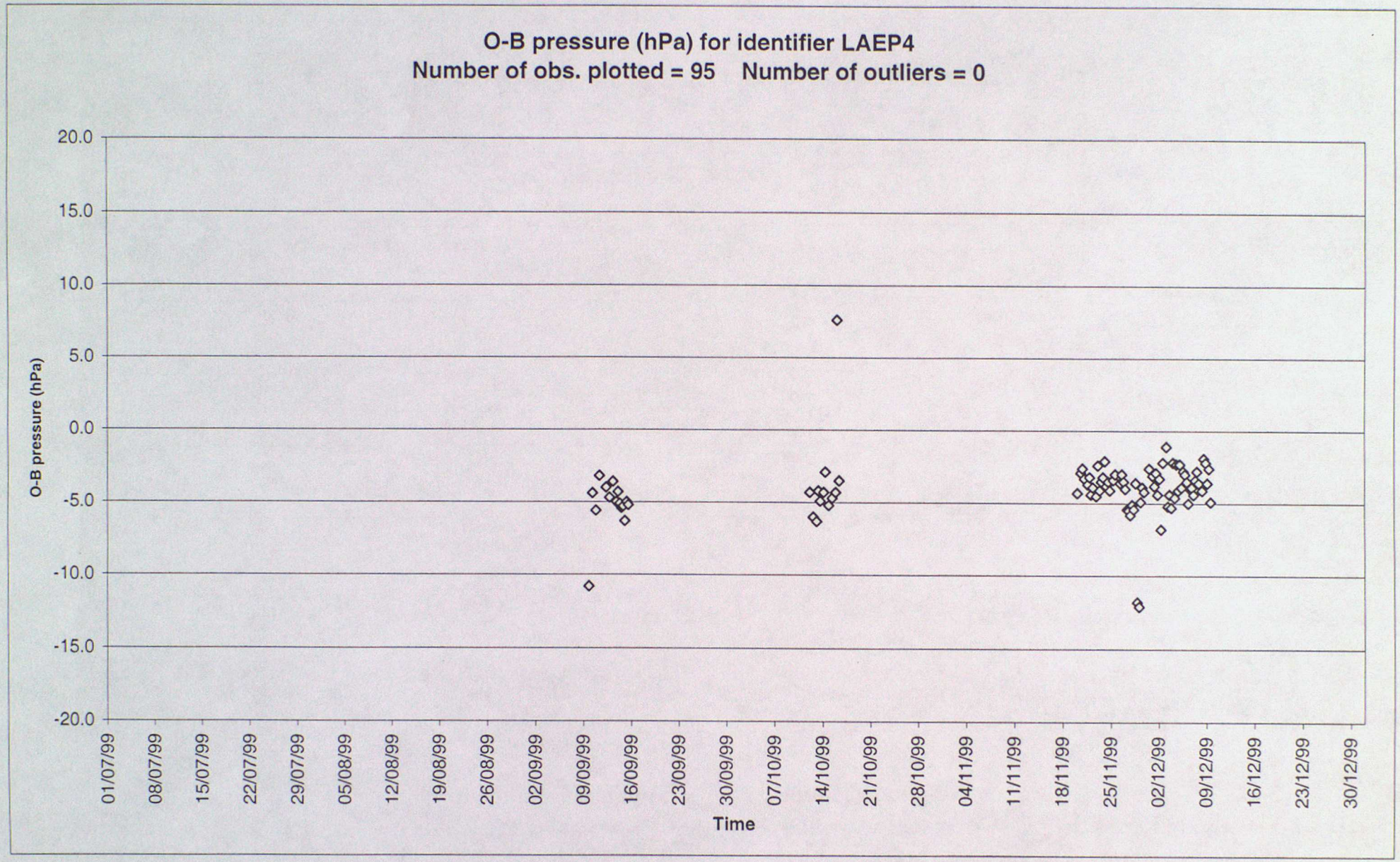

O-B pressure (hPa) for identifier ELVI2
Number of obs. plotted = 353 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier ELVJ9
Number of obs. plotted = 474 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier ELWR3
Number of obs. plotted = 69 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier KHLN
Number of obs. plotted = 87 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier KMJL
Number of obs. plotted = 72 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier LAEP4
Number of obs. plotted = 95 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
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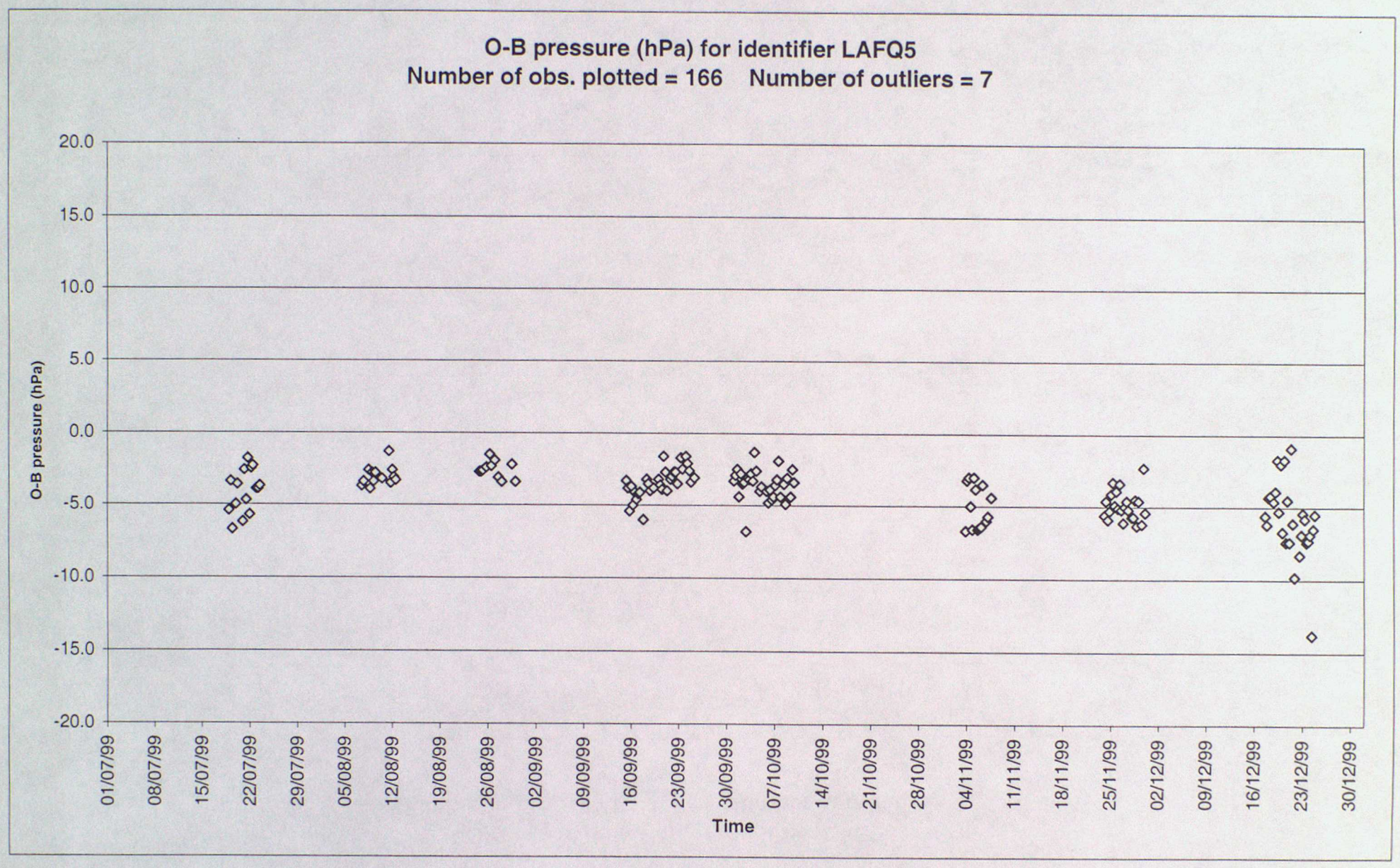
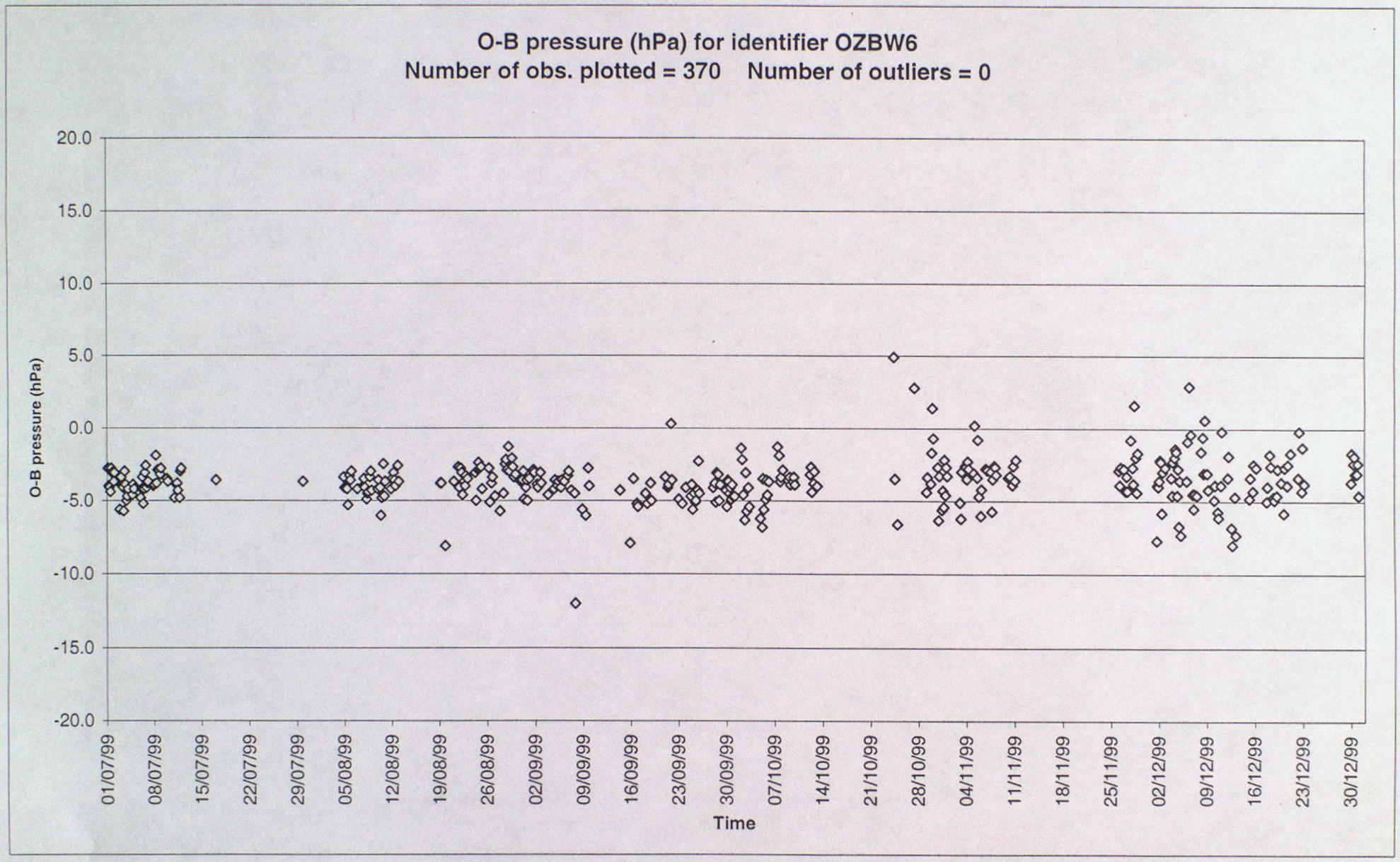
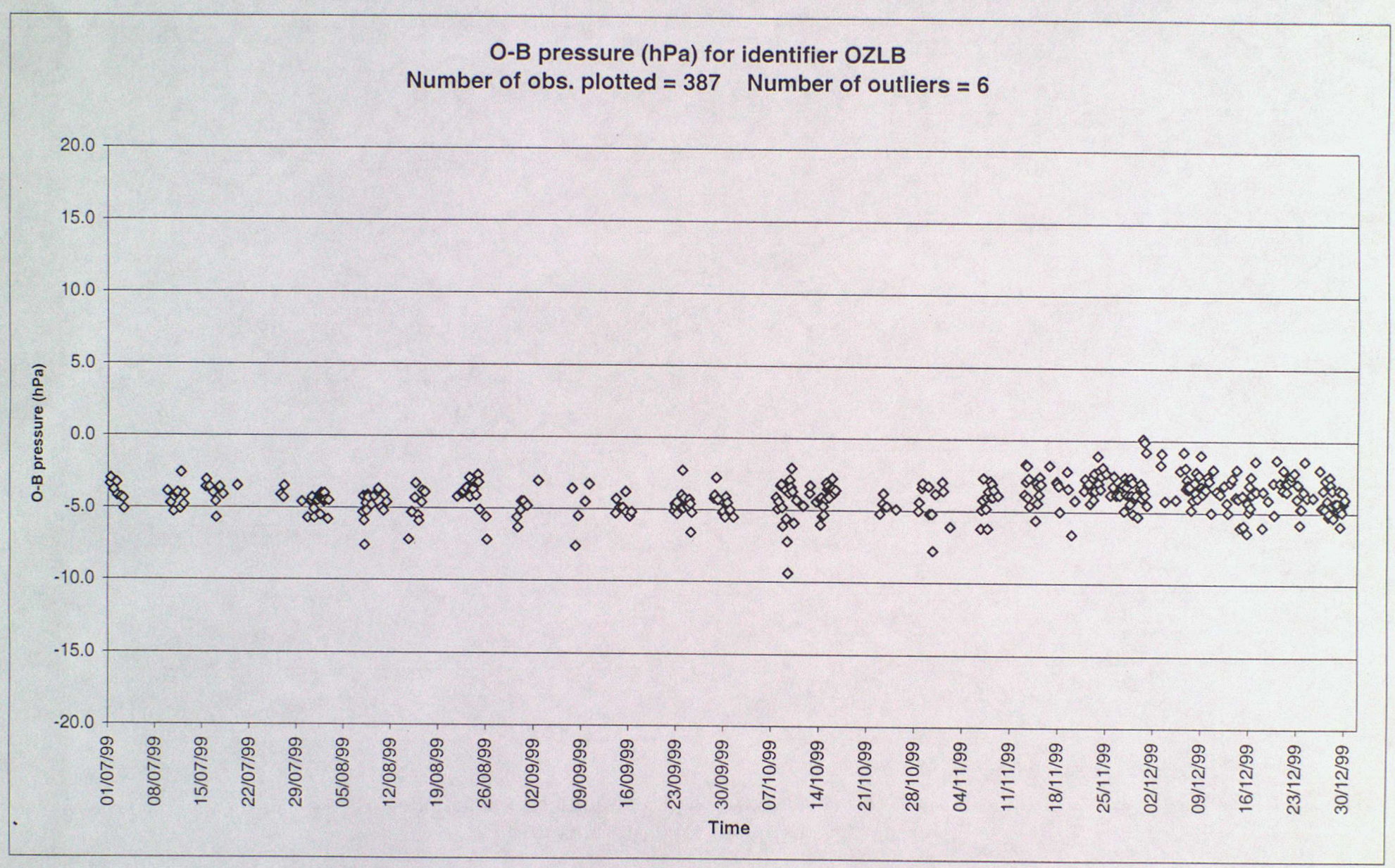
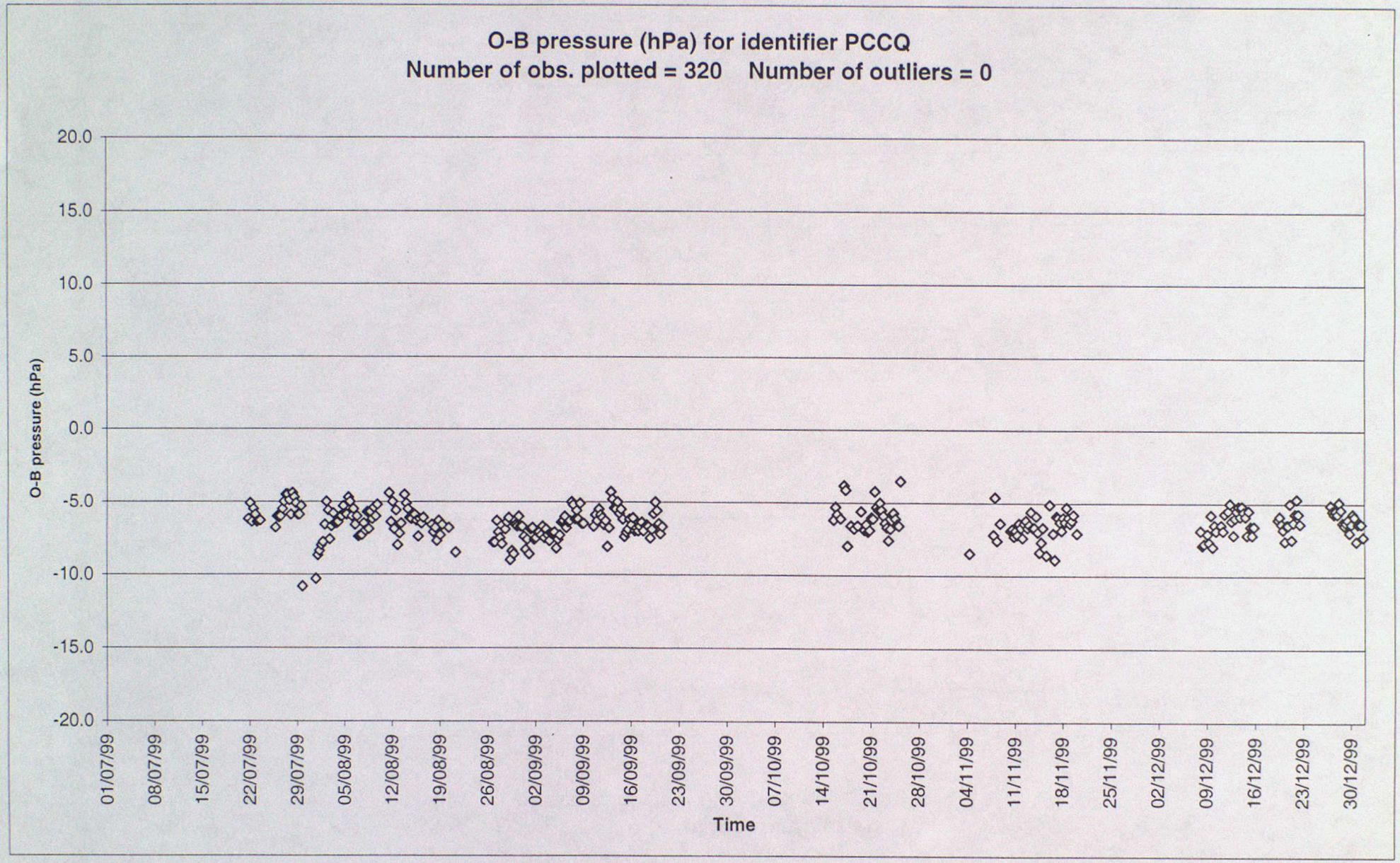
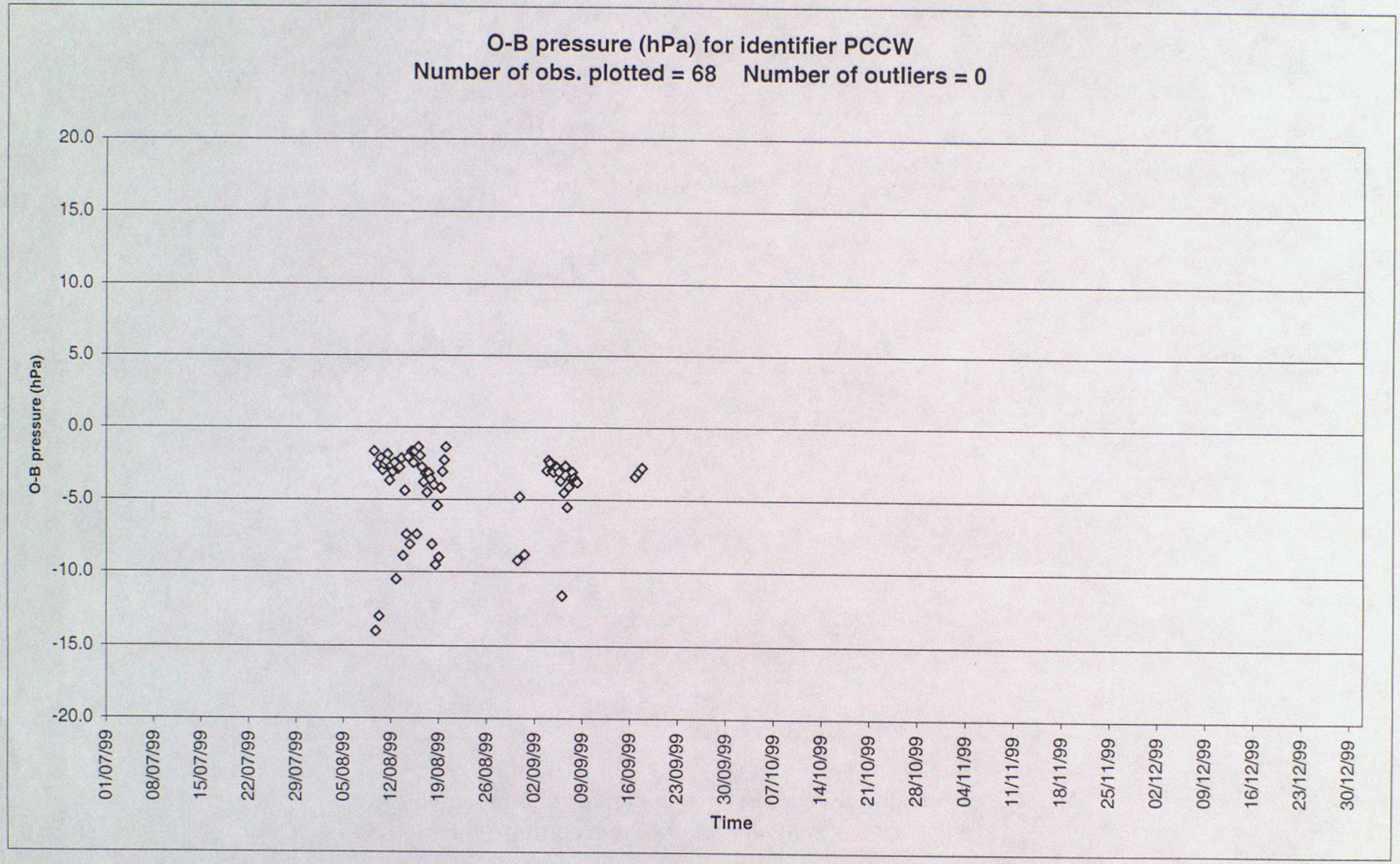
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

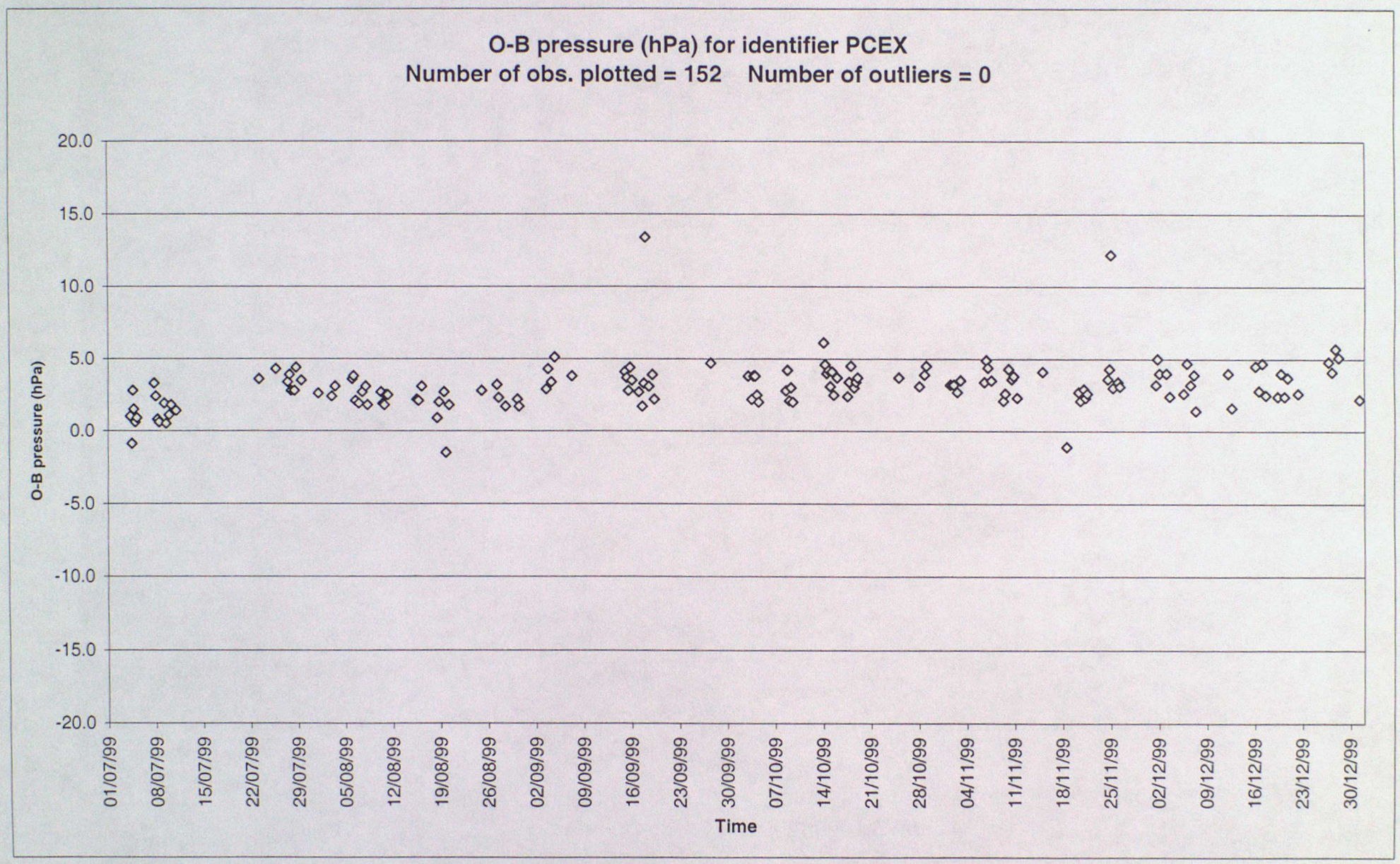

O-B pressure (hPa) for identifier LAFQ5
Number of obs. plotted = 166 Number of outliers = 7
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

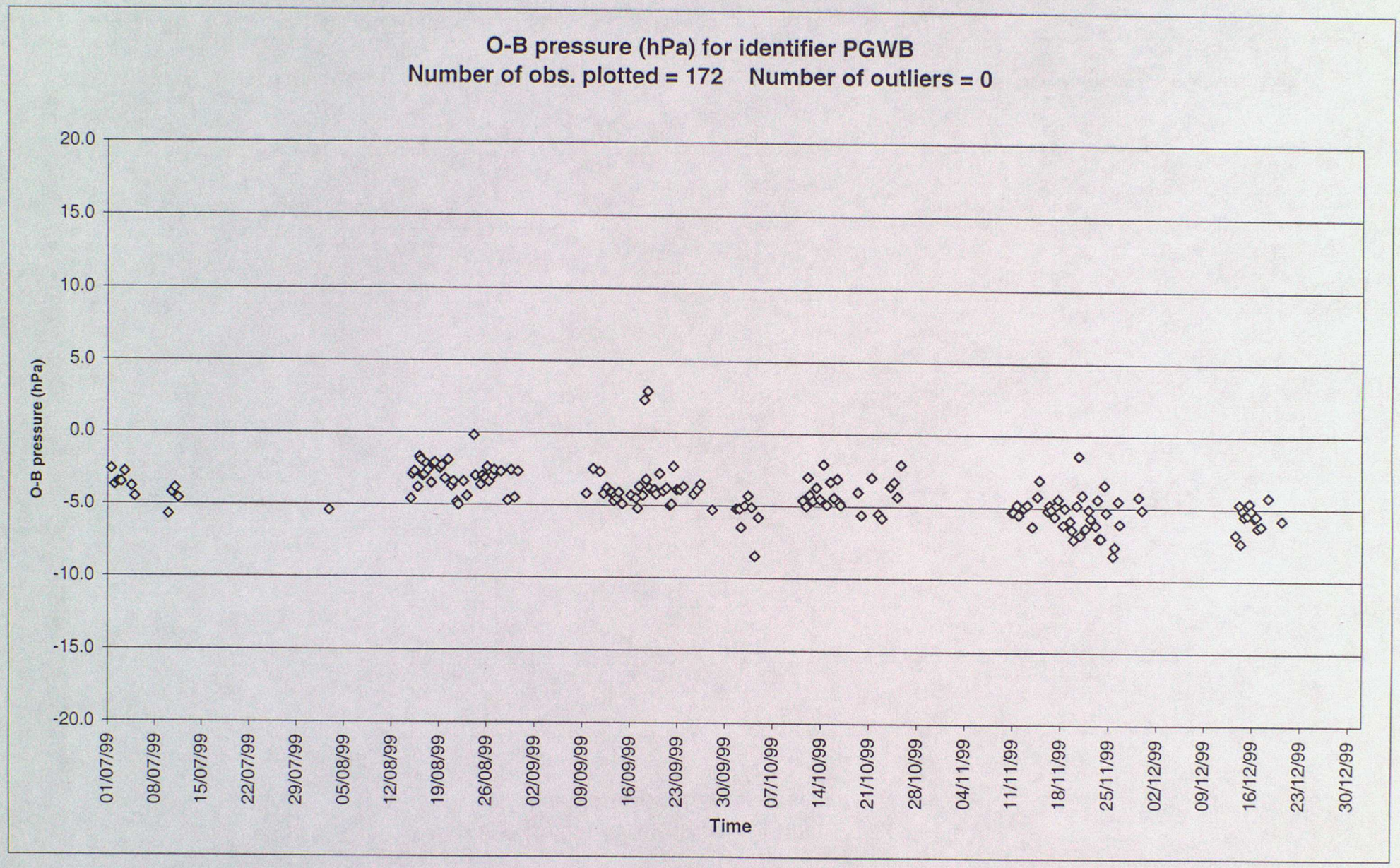

O-B pressure (hPa) for identifier OZBW6
Number of obs. plotted = 370 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

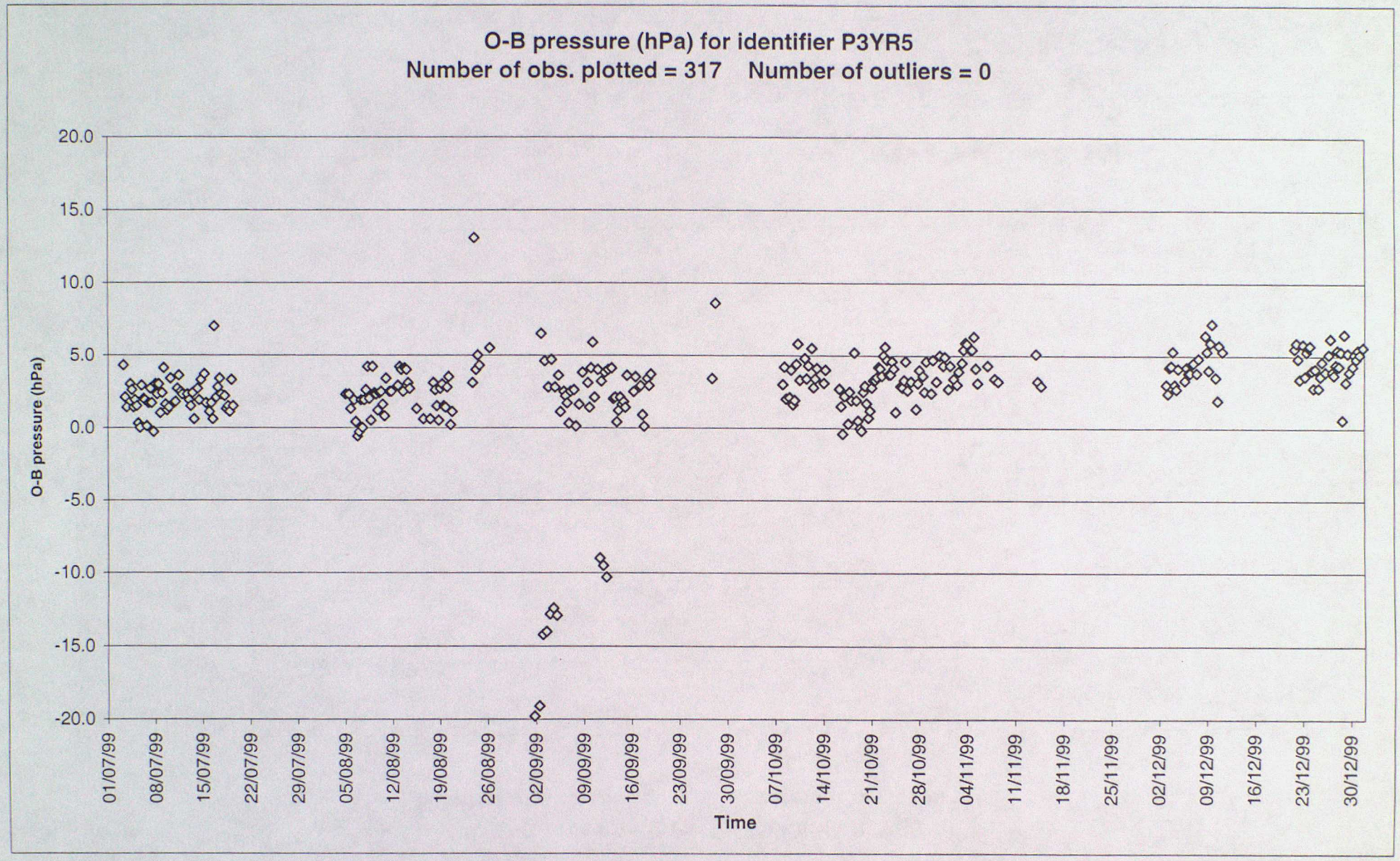

O-B pressure (hPa) for identifier OZLB
Number of obs. plotted = 387 Number of outliers = 6
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

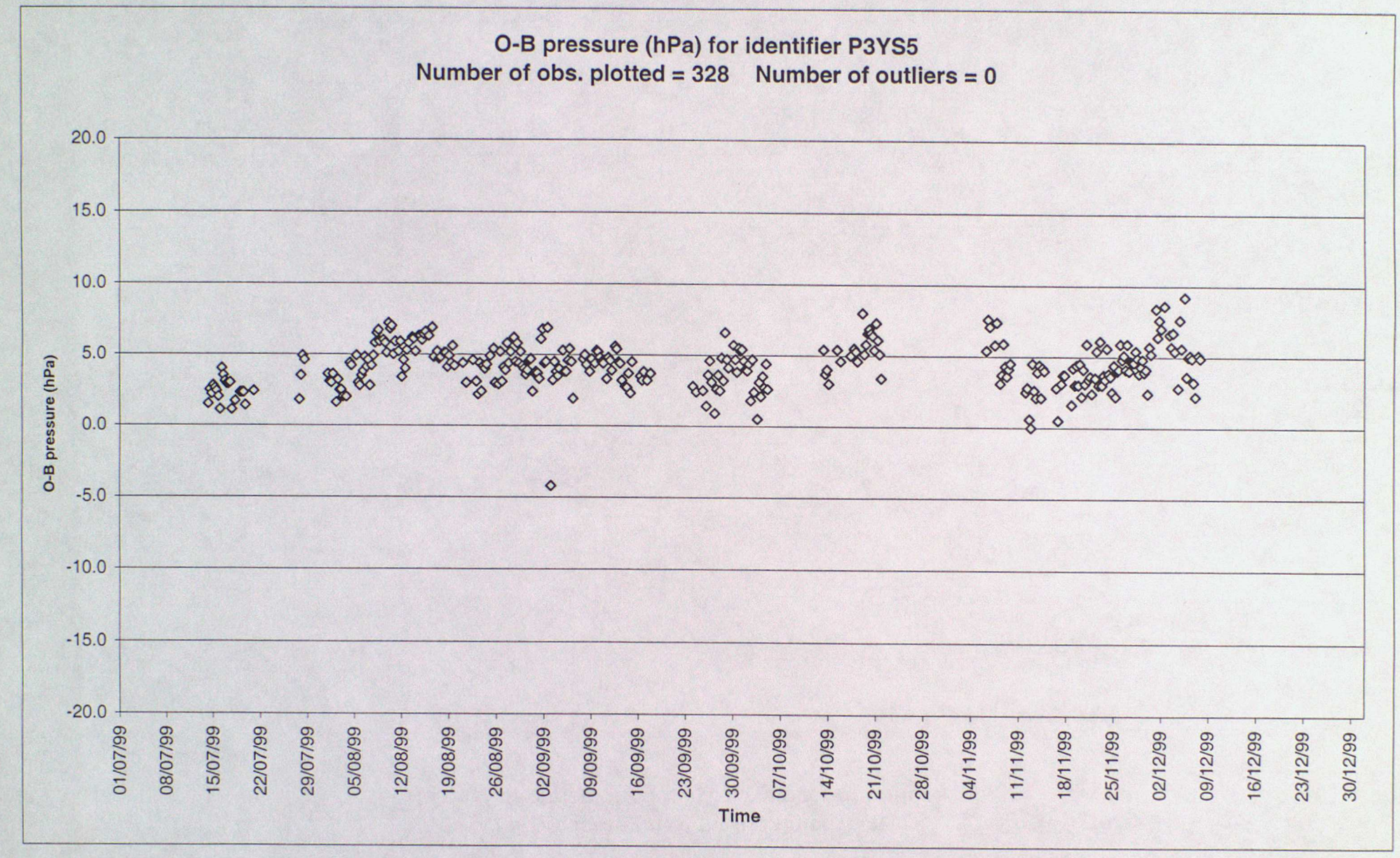

O-B pressure (hPa) for identifier PCCQ
Number of obs. plotted = 320 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

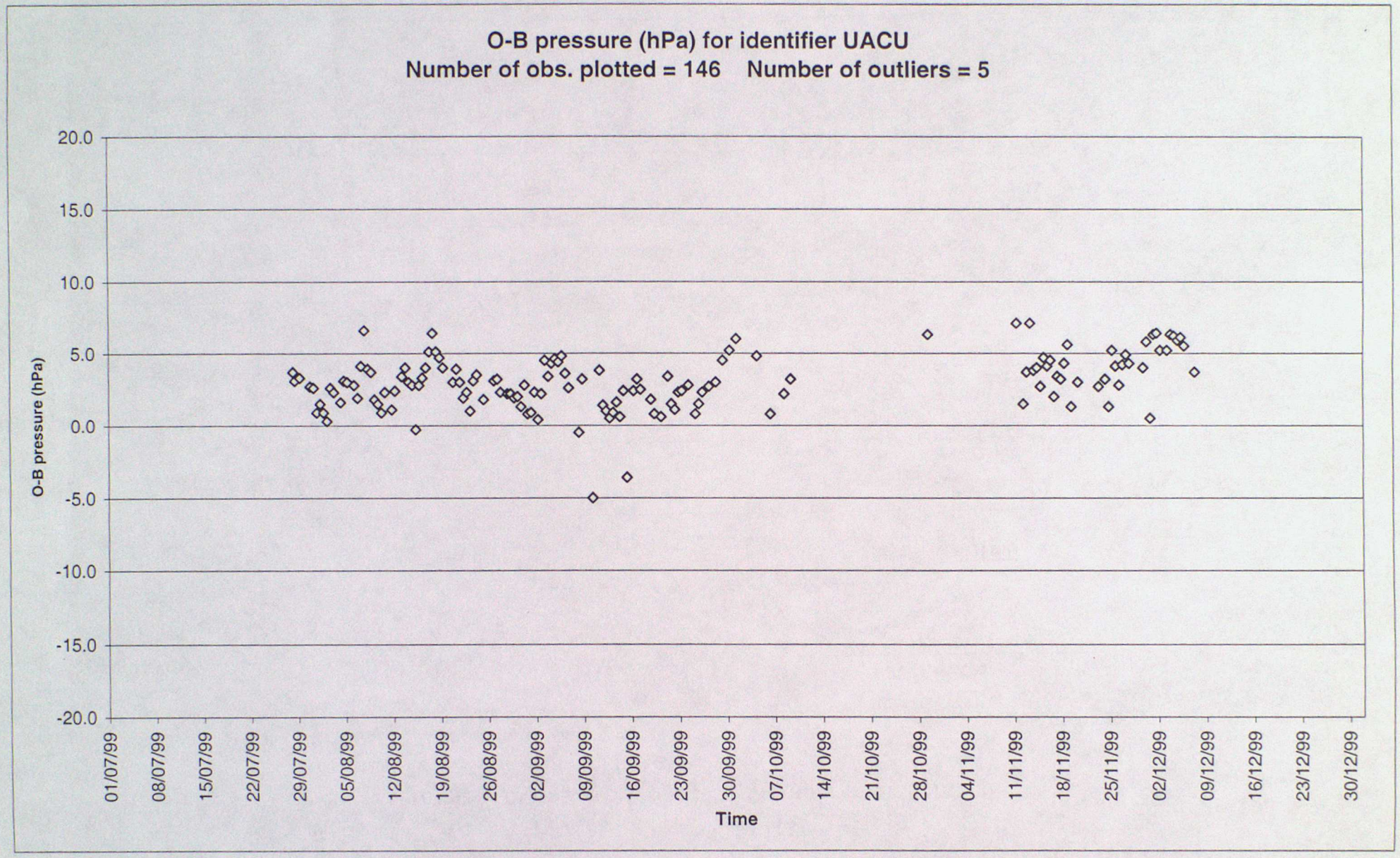

O-B pressure (hPa) for identifier PCCW
Number of obs. plotted = 68 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

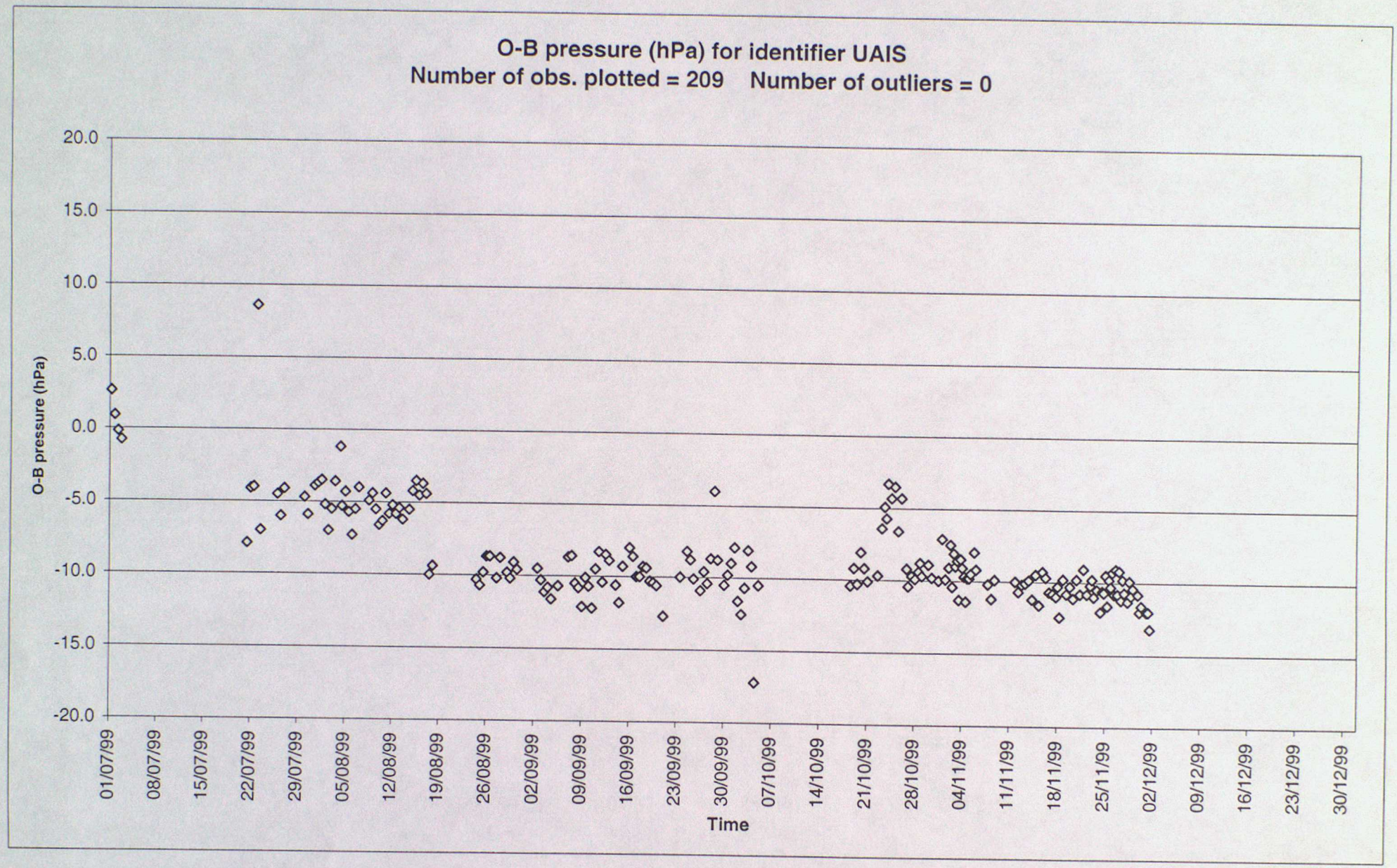

O-B pressure (hPa) for identifier PCEX
Number of obs. plotted = 152 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

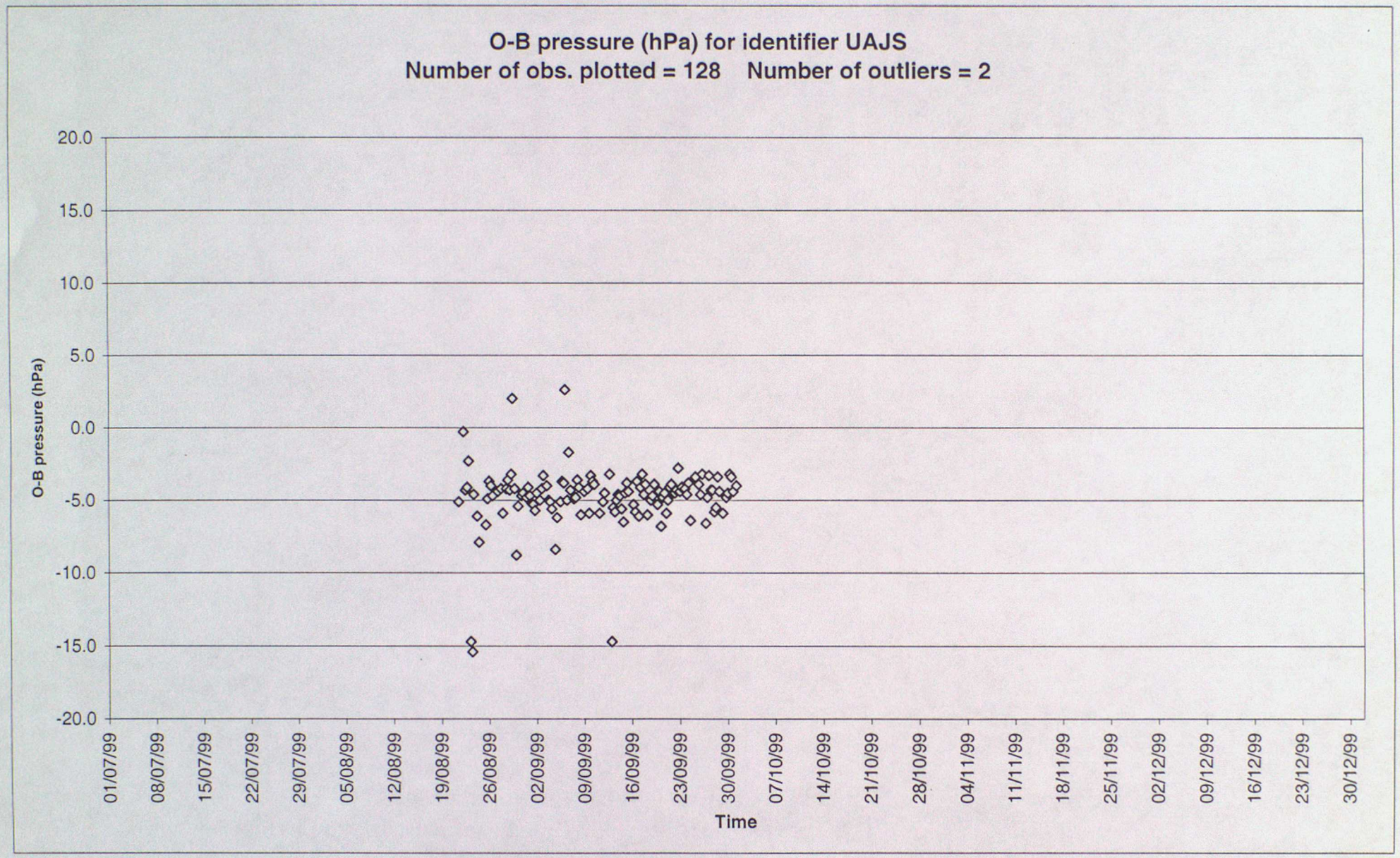

O-B pressure (hPa) for identifier PGWB
Number of obs. plotted = 172 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier P3YR5
Number of obs. plotted = 317 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

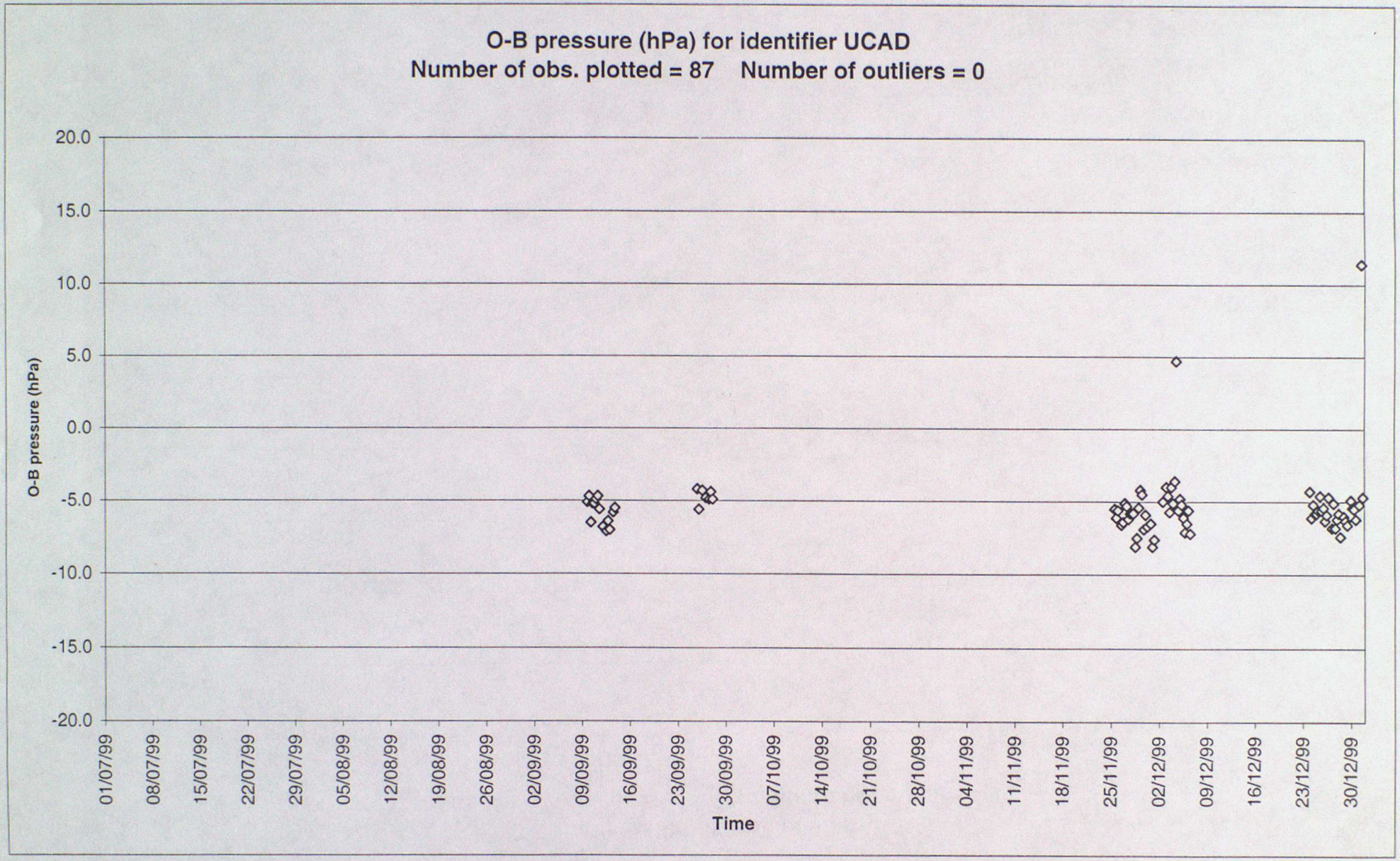

O-B pressure (hPa) for identifier P3YS5
Number of obs. plotted = 328 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

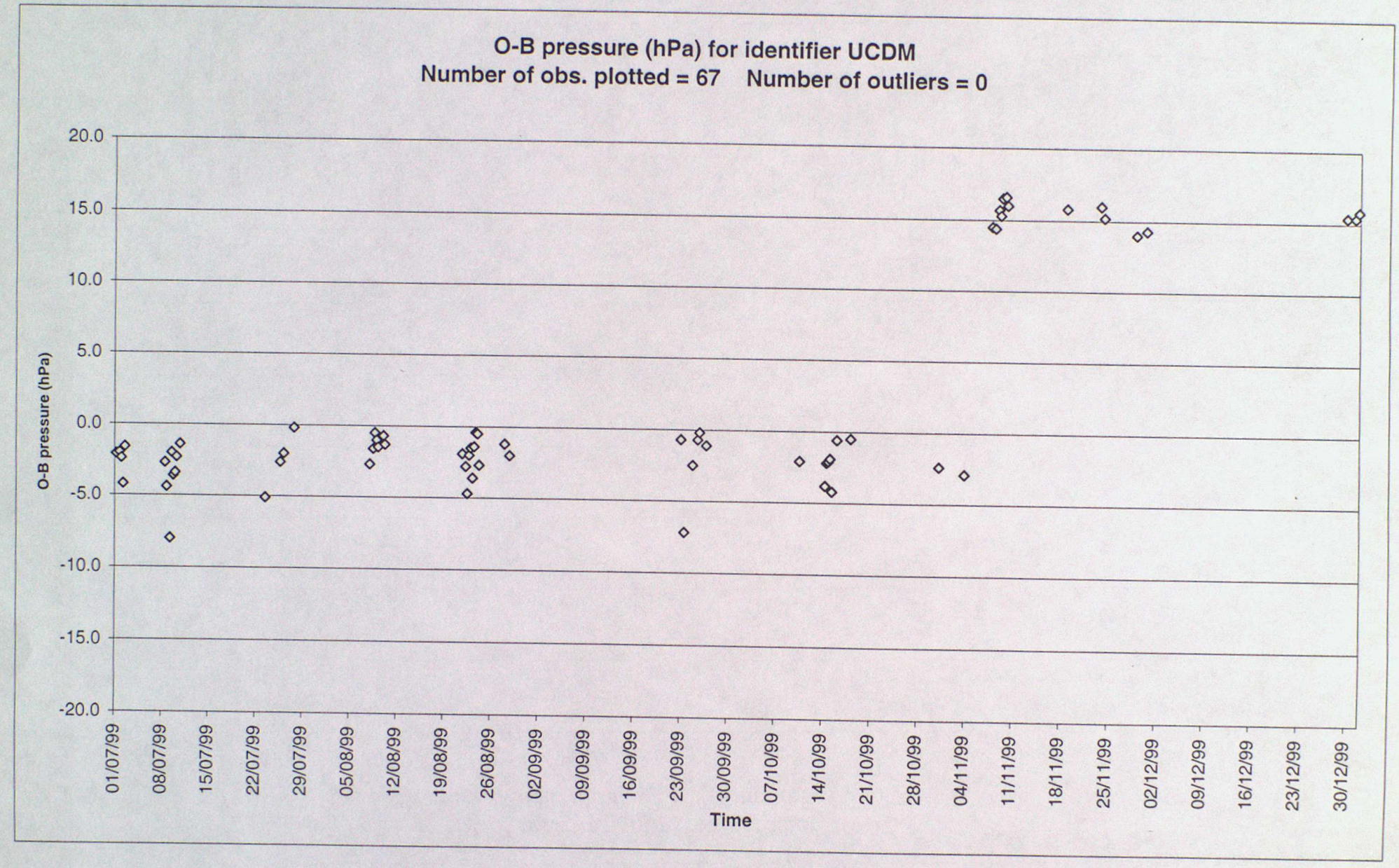

O-B pressure (hPa) for identifier UACU
Number of obs. plotted = 146 Number of outliers = 5
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

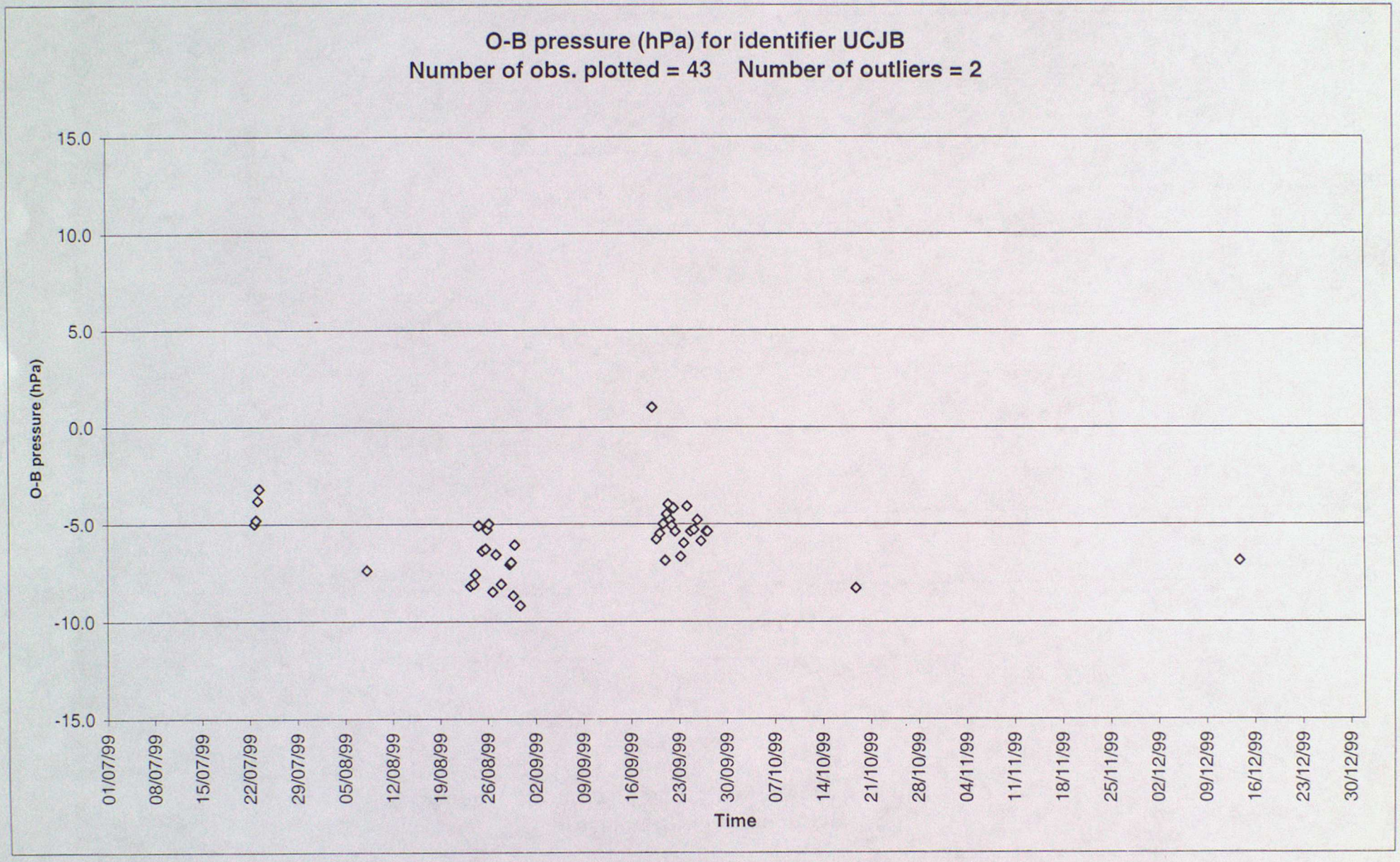

O-B pressure (hPa) for identifier UAIS
Number of obs. plotted = 209 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

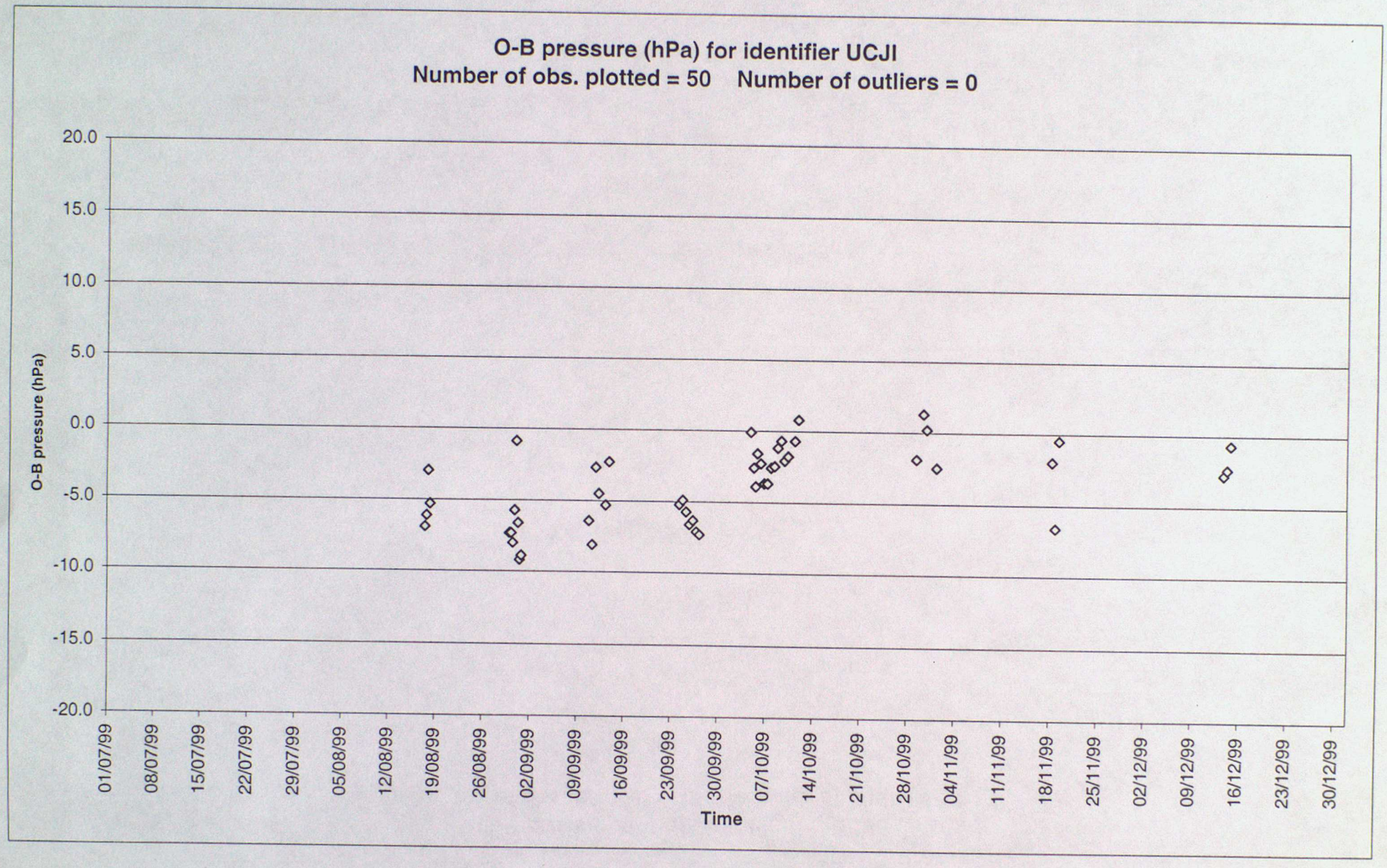

O-B pressure (hPa) for identifier UAJS
Number of obs. plotted = 128 Number of outliers = 2
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

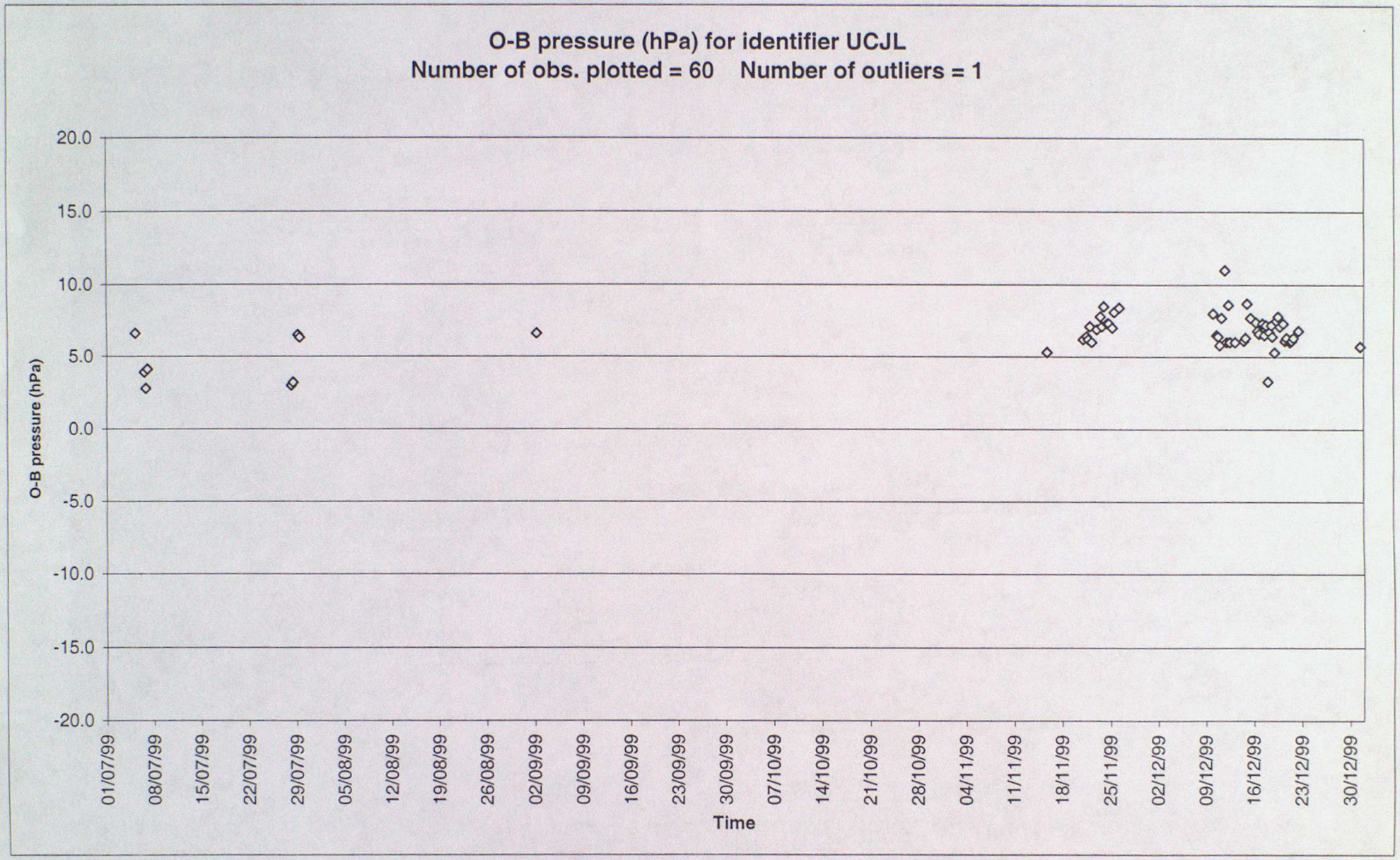
O-B pressure (hPa) for identifier UAMS
Number of obs. plotted = 103 Number of outliers = 23
O-B pressure (hPa)
20.0
10.0
0.0
-10.0
-20.0
Time
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99

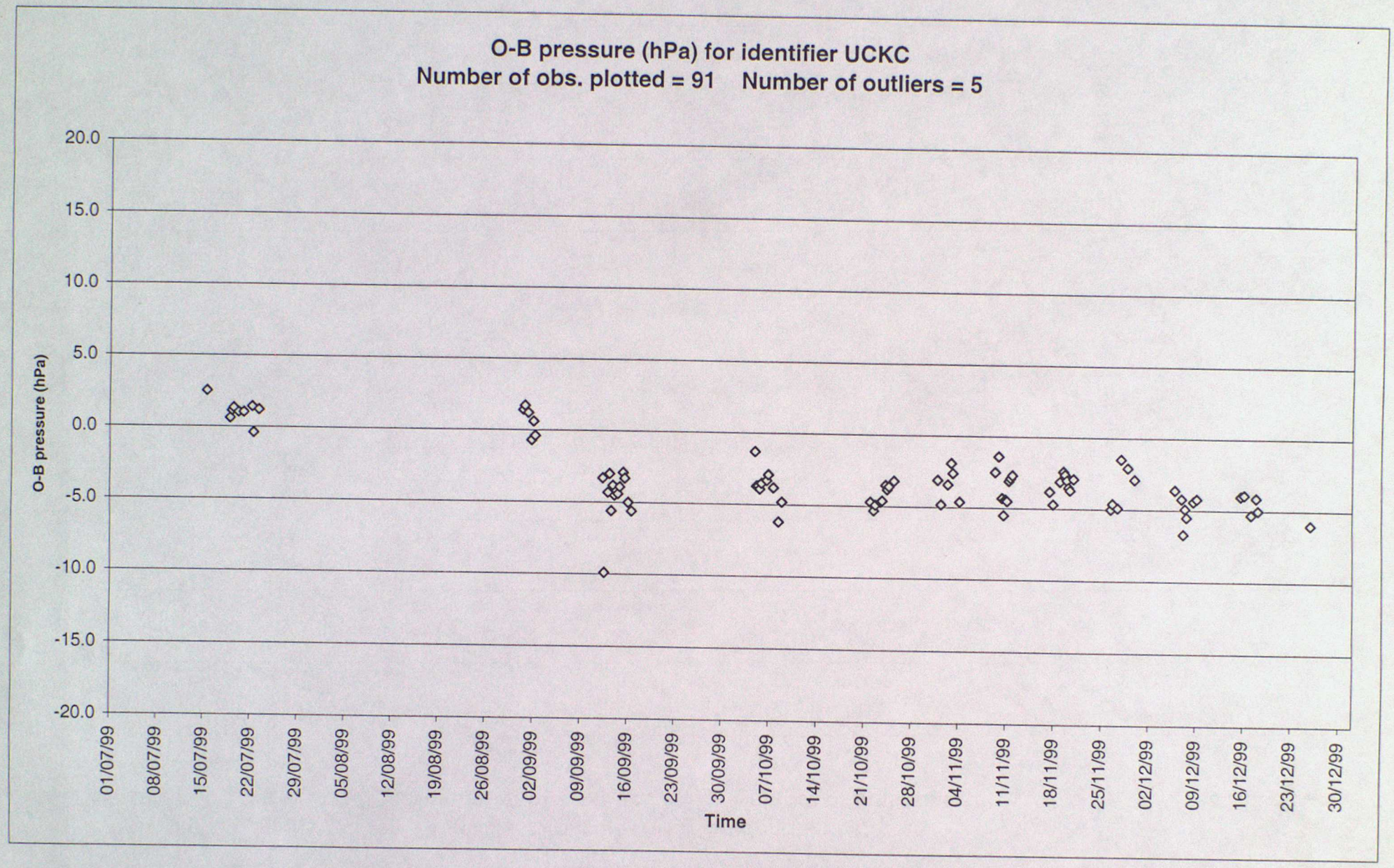

O-B pressure (hPa) for identifier UCAD
Number of obs. plotted = 87 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

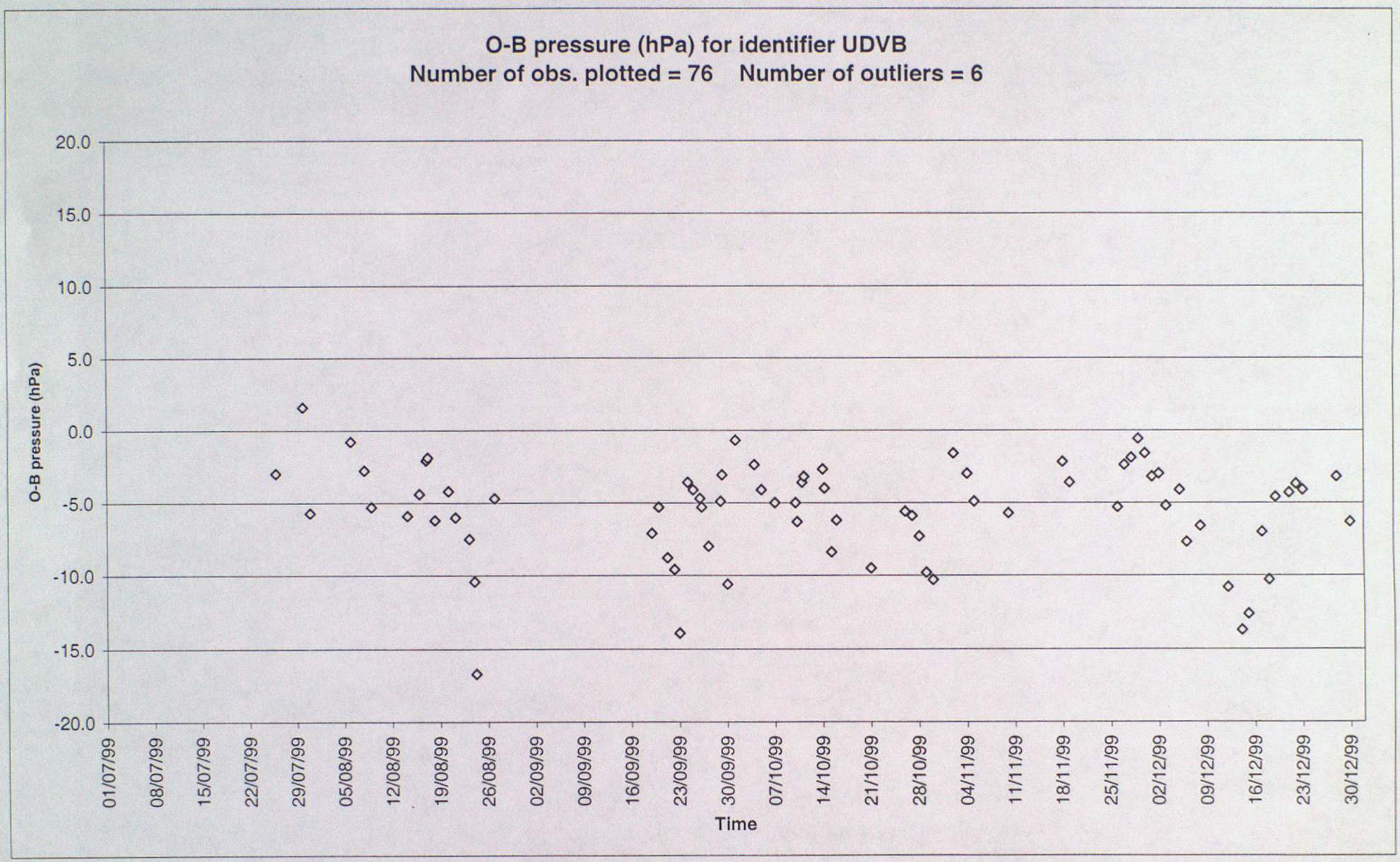

O-B pressure (hPa) for identifier UCDM
Number of obs. plotted = 67 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

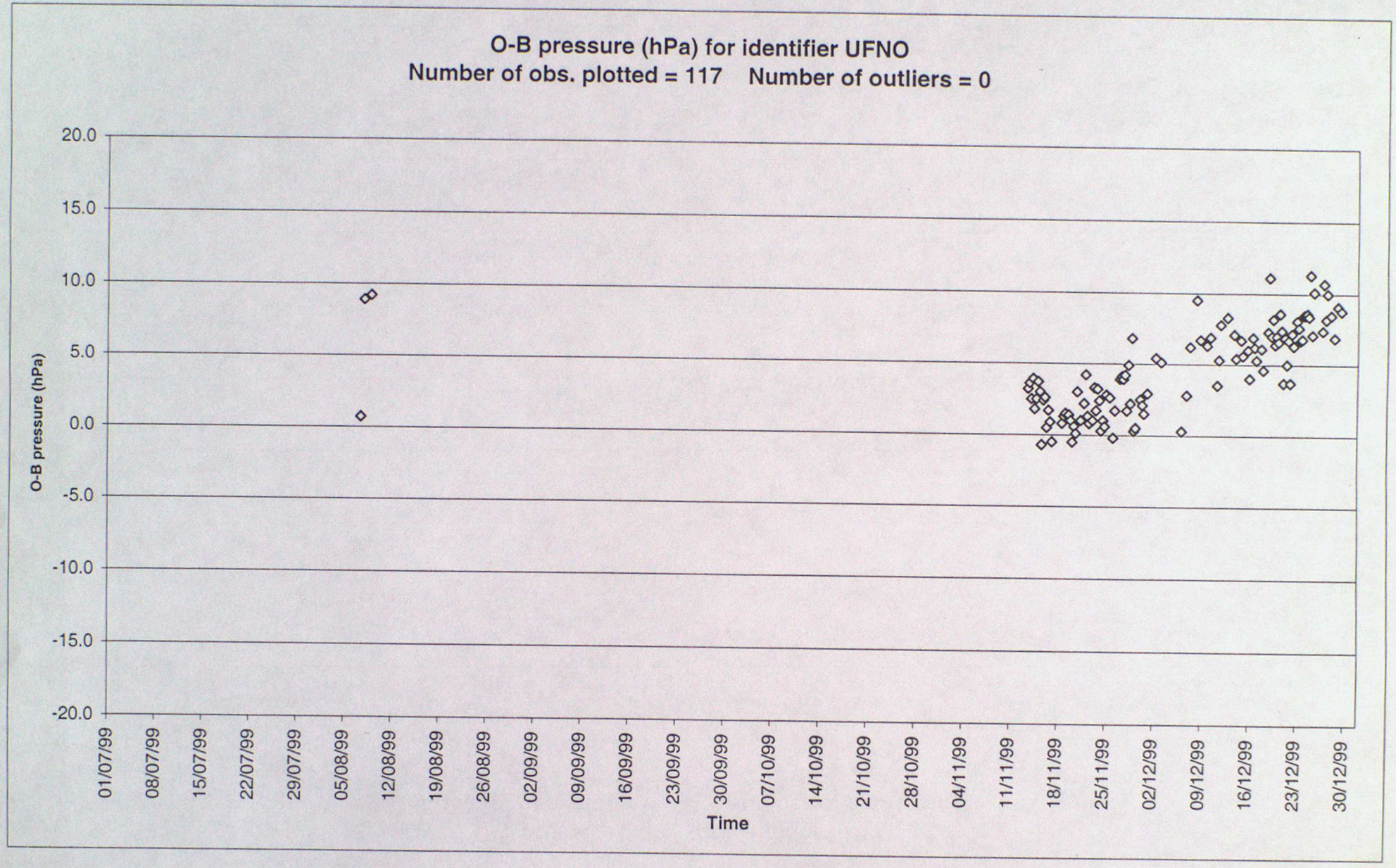

O-B pressure (hPa) for identifier UCJB
Number of obs. plotted = 43 Number of outliers = 2
O-B pressure (hPa)
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

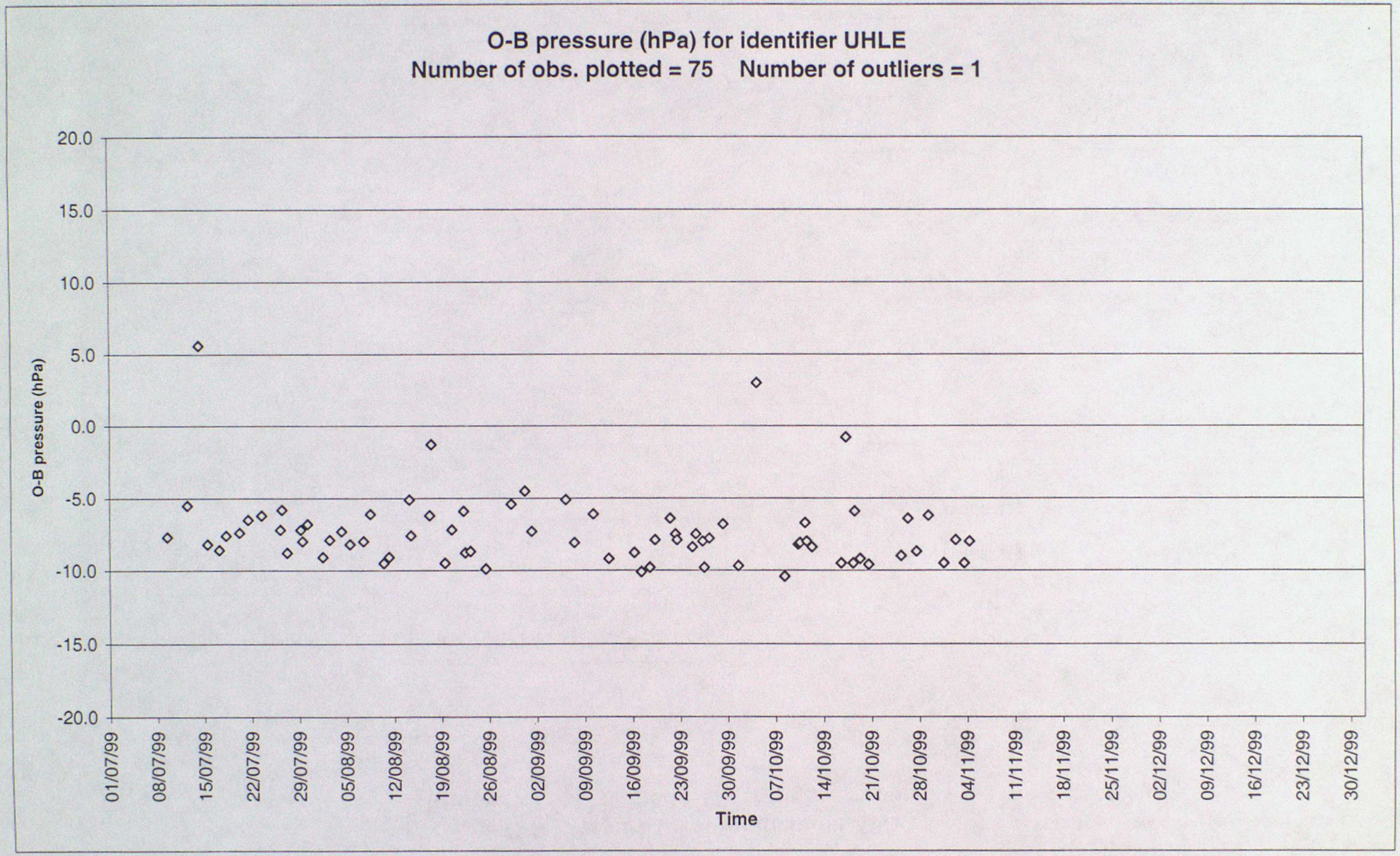

O-B pressure (hPa) for identifier UCJI
Number of obs. plotted = 50 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

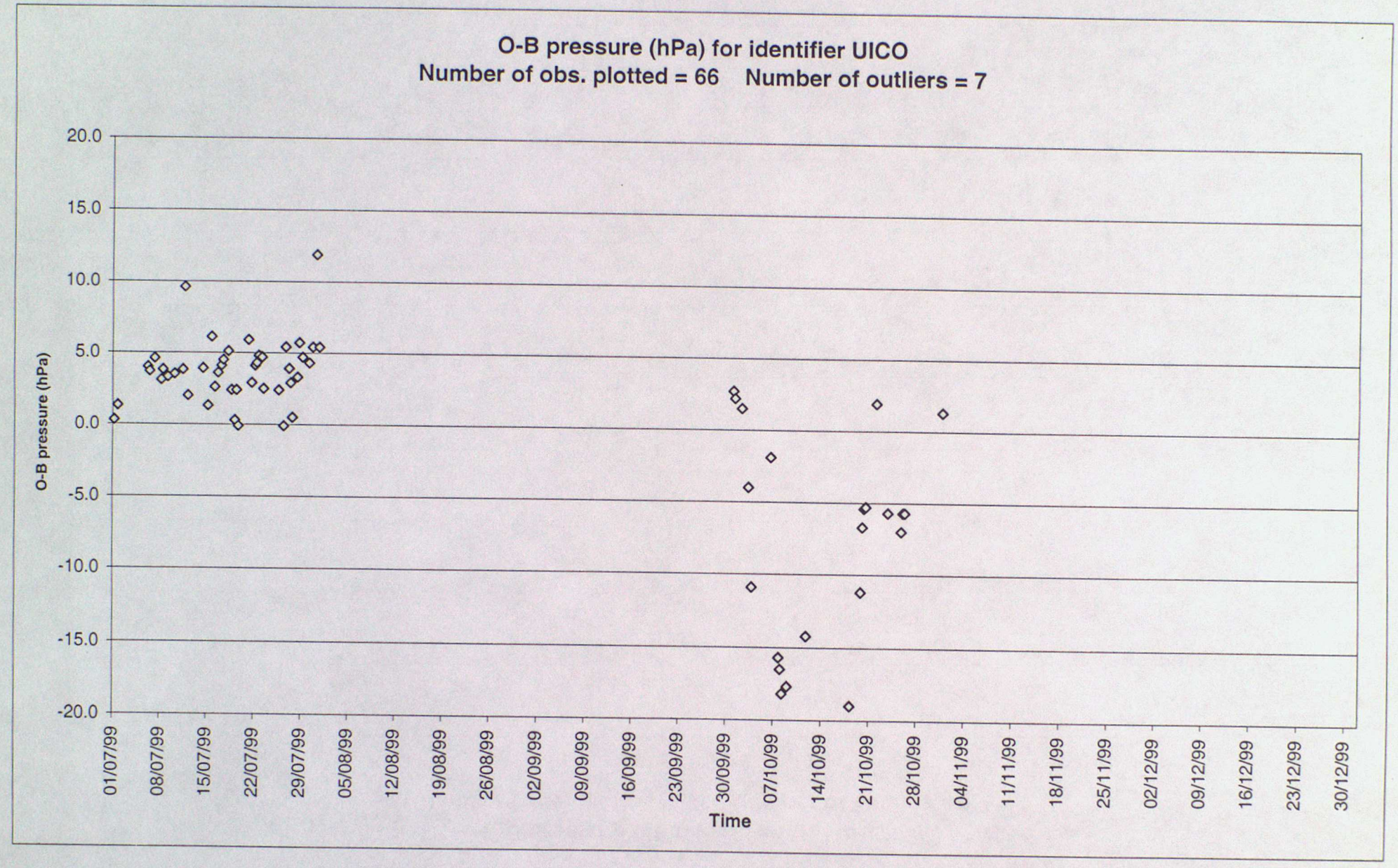

O-B pressure (hPa) for identifier UCJL
Number of obs. plotted = 60 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

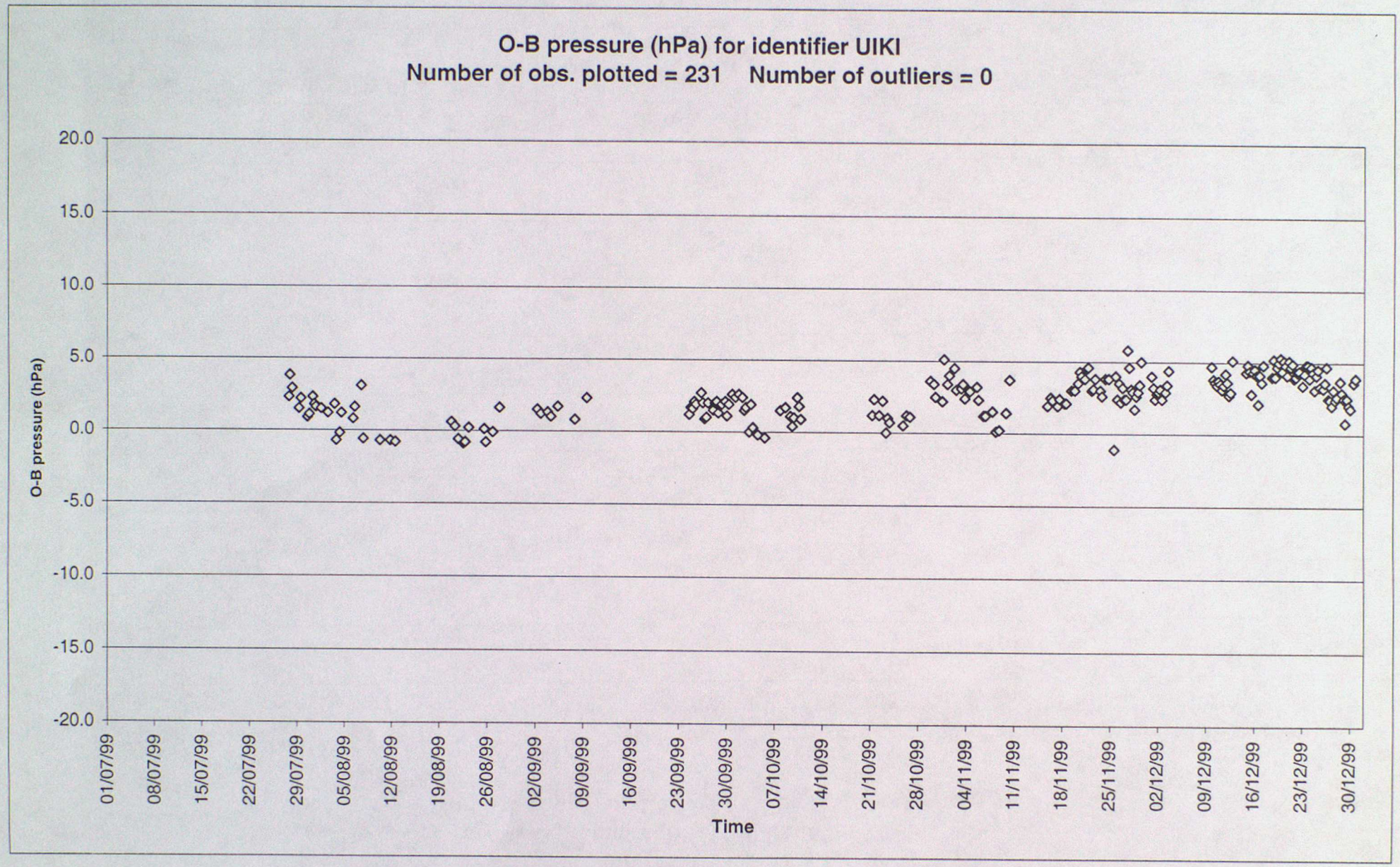

O-B pressure (hPa) for identifier UCKC
Number of obs. plotted = 91 Number of outliers = 5
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

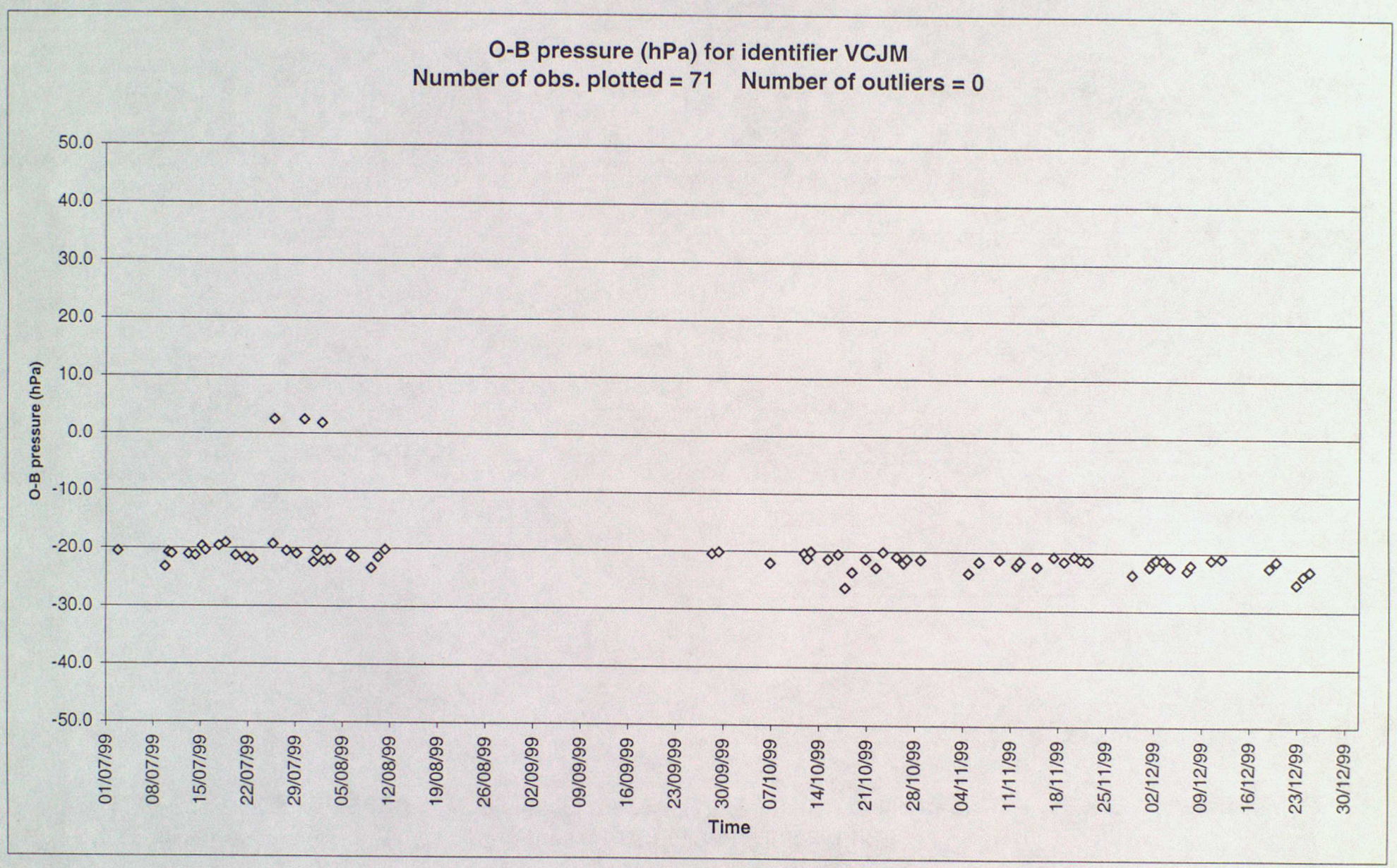

O-B pressure (hPa) for identifier UDVB
Number of obs. plotted = 76 Number of outliers = 6
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

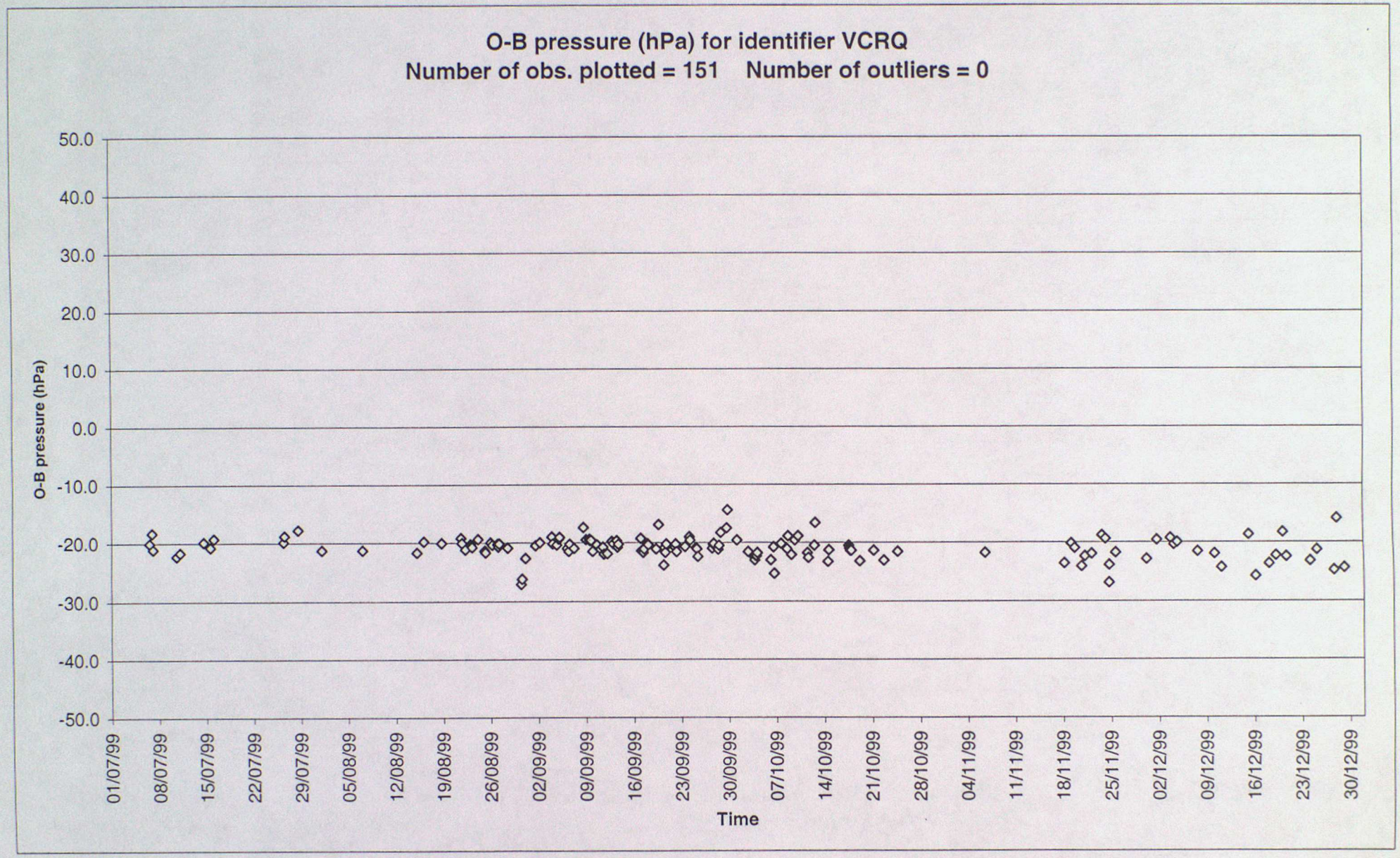

O-B pressure (hPa) for identifier UFNO
Number of obs. plotted = 117 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

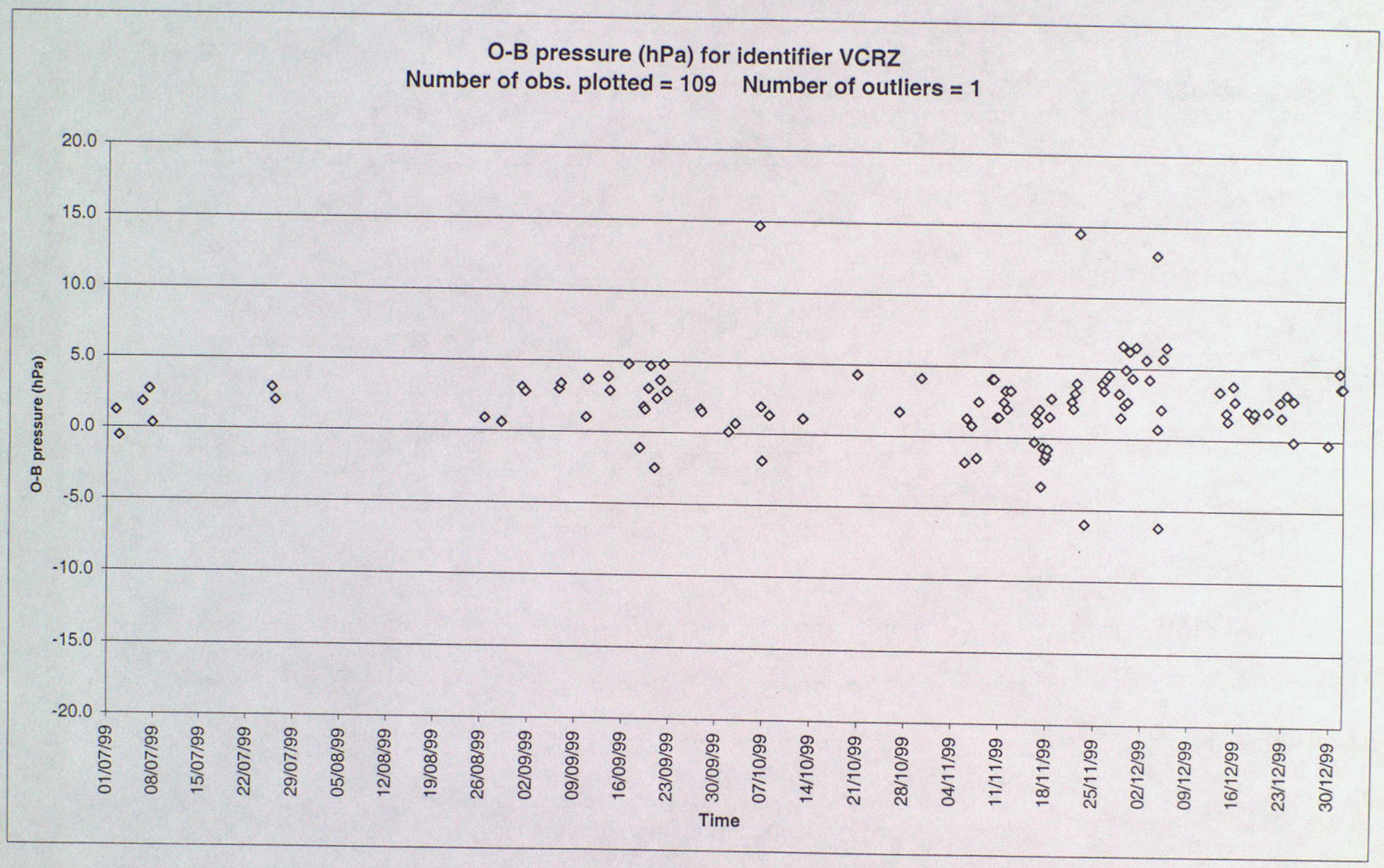

O-B pressure (hPa) for identifier UHLE
Number of obs. plotted = 75 Number of outliers = 1
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
O-B pressure (hPa)
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

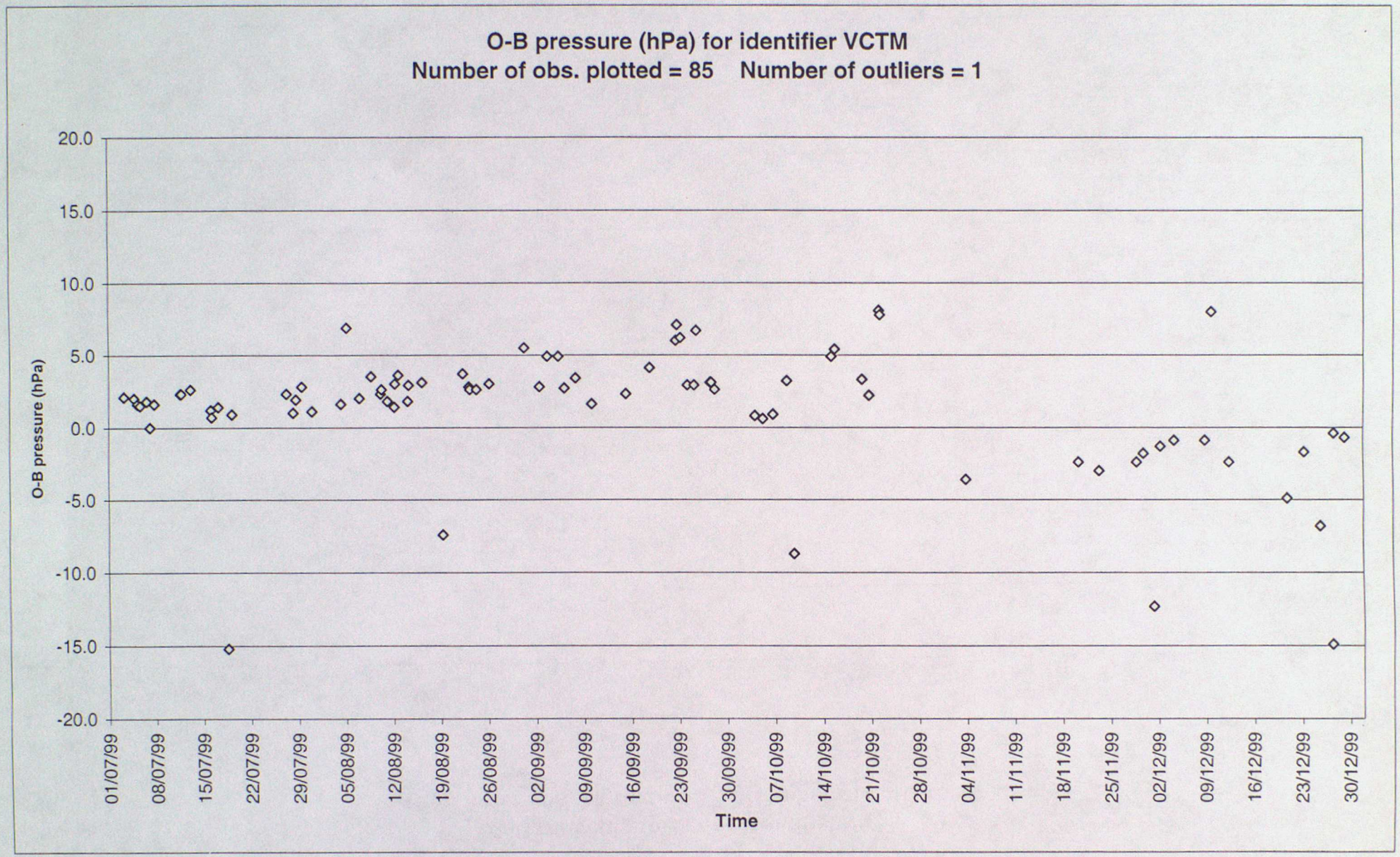

O-B pressure (hPa) for identifier UICO
Number of obs. plotted = 66 Number of outliers = 7
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

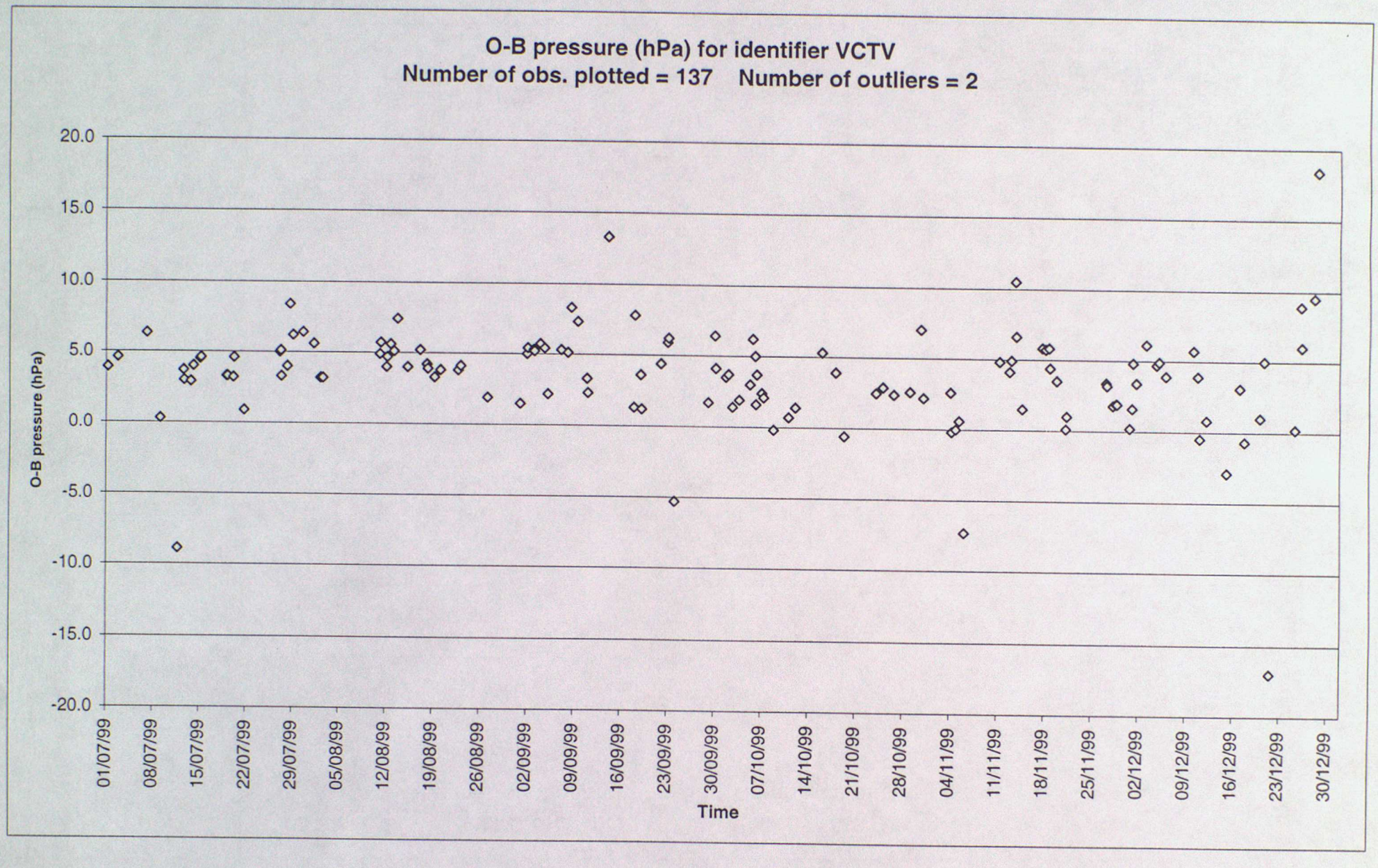

O-B pressure (hPa) for identifier UIKI
Number of obs. plotted = 231 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

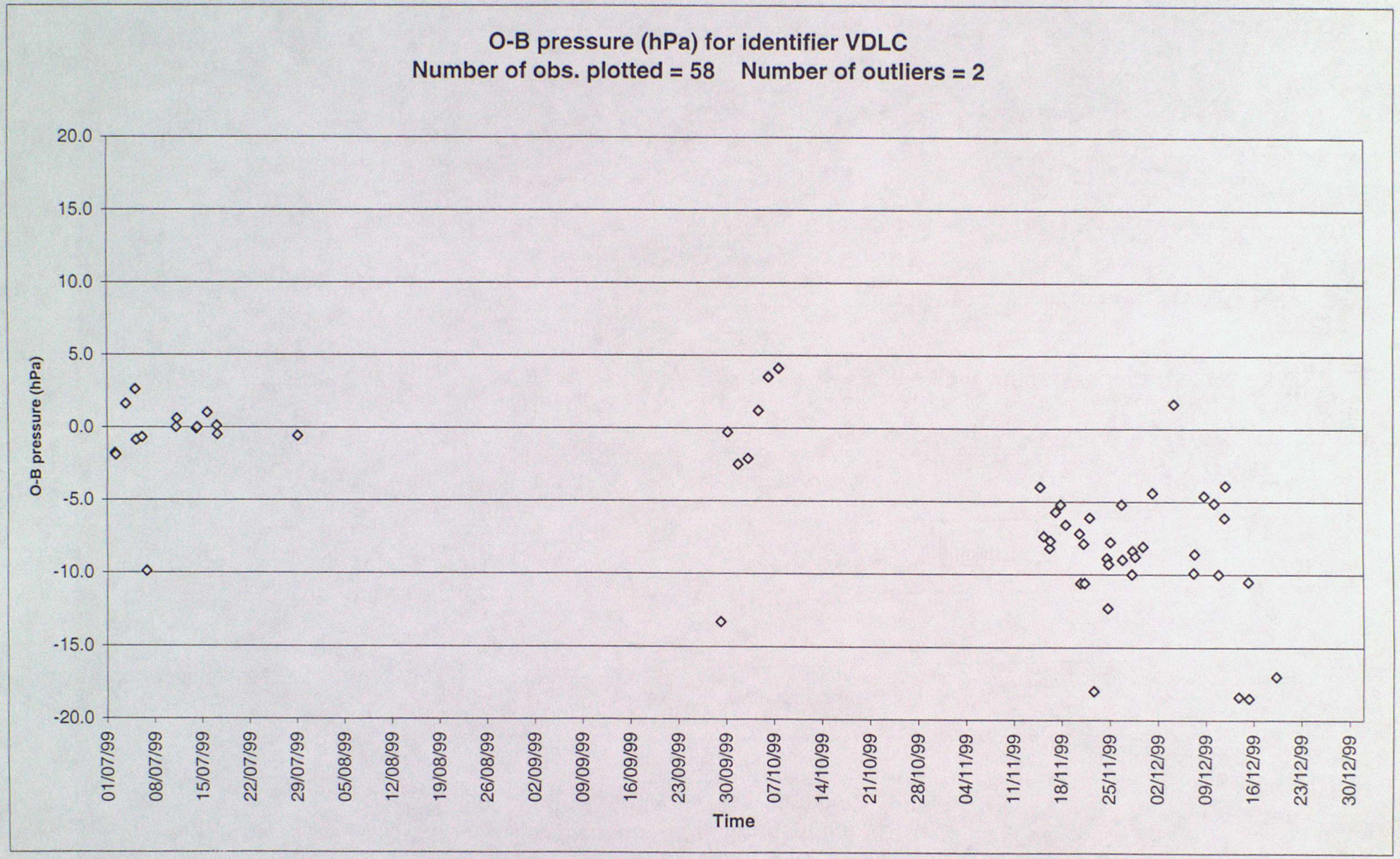

O-B pressure (hPa) for identifier VCJM
Number of obs. plotted = 71 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

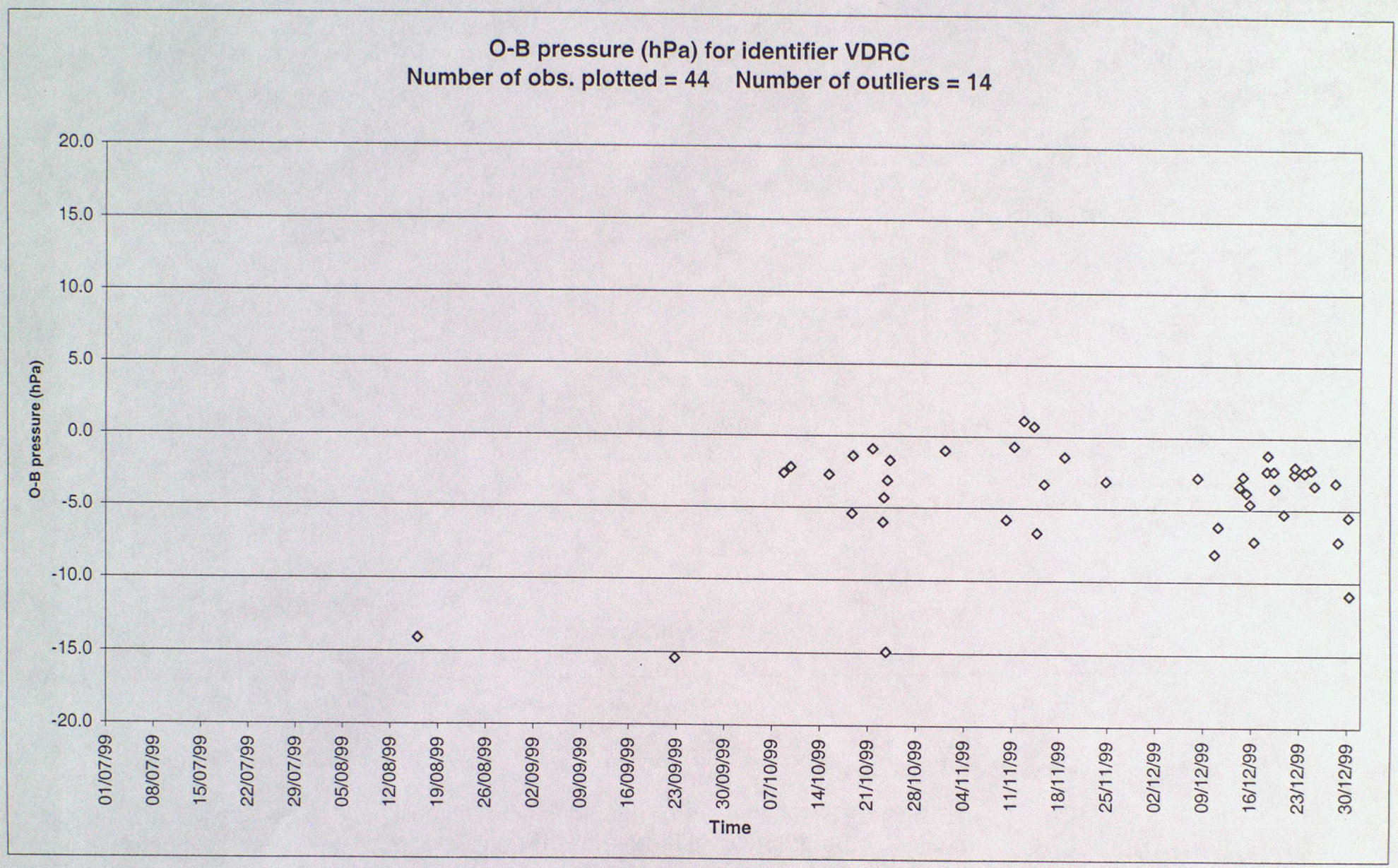

O-B pressure (hPa) for identifier VCRQ
Number of obs. plotted = 151 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

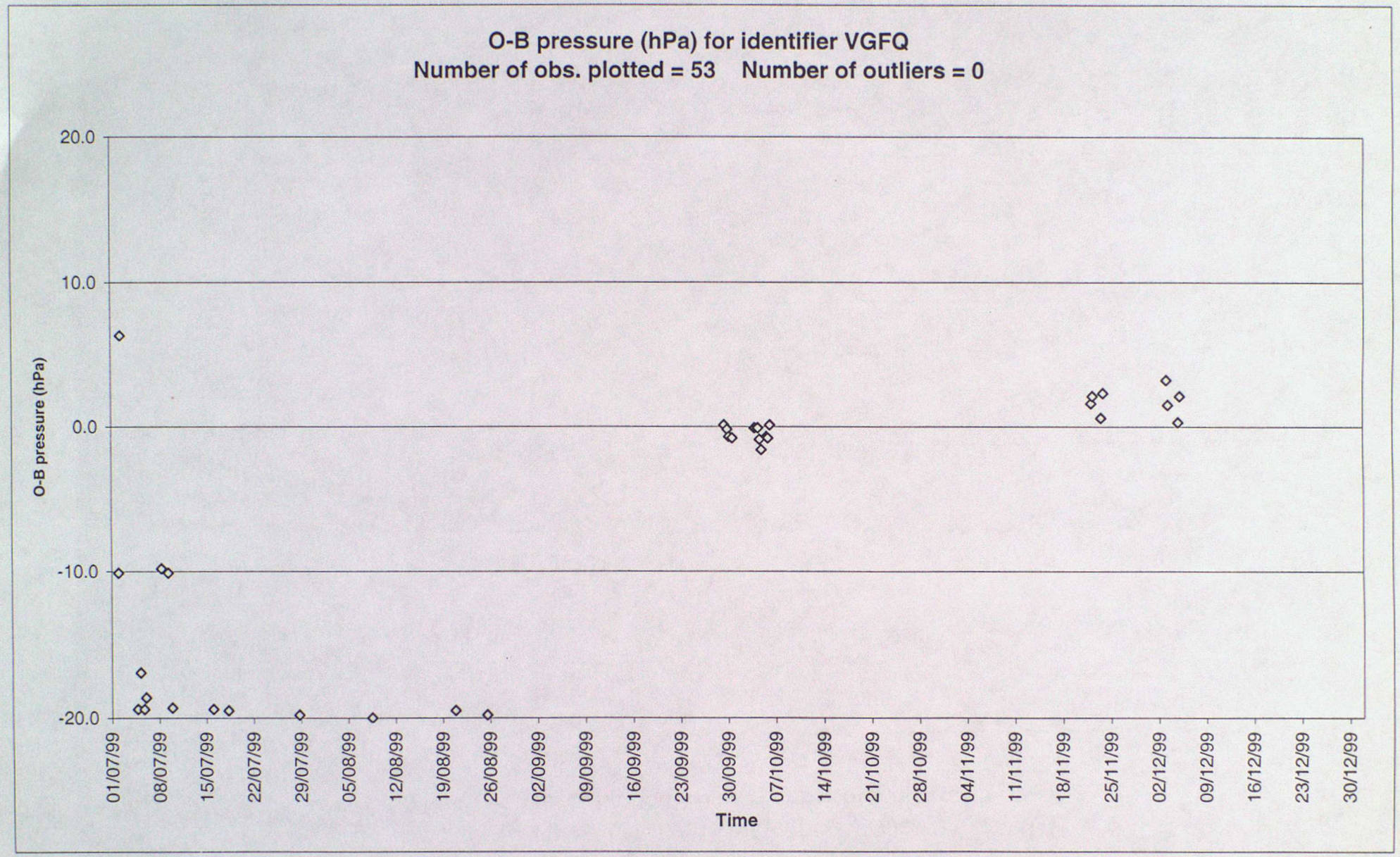

O-B pressure (hPa) for identifier VCRZ
Number of obs. plotted = 109 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier VCTM
Number of obs. plotted = 85 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

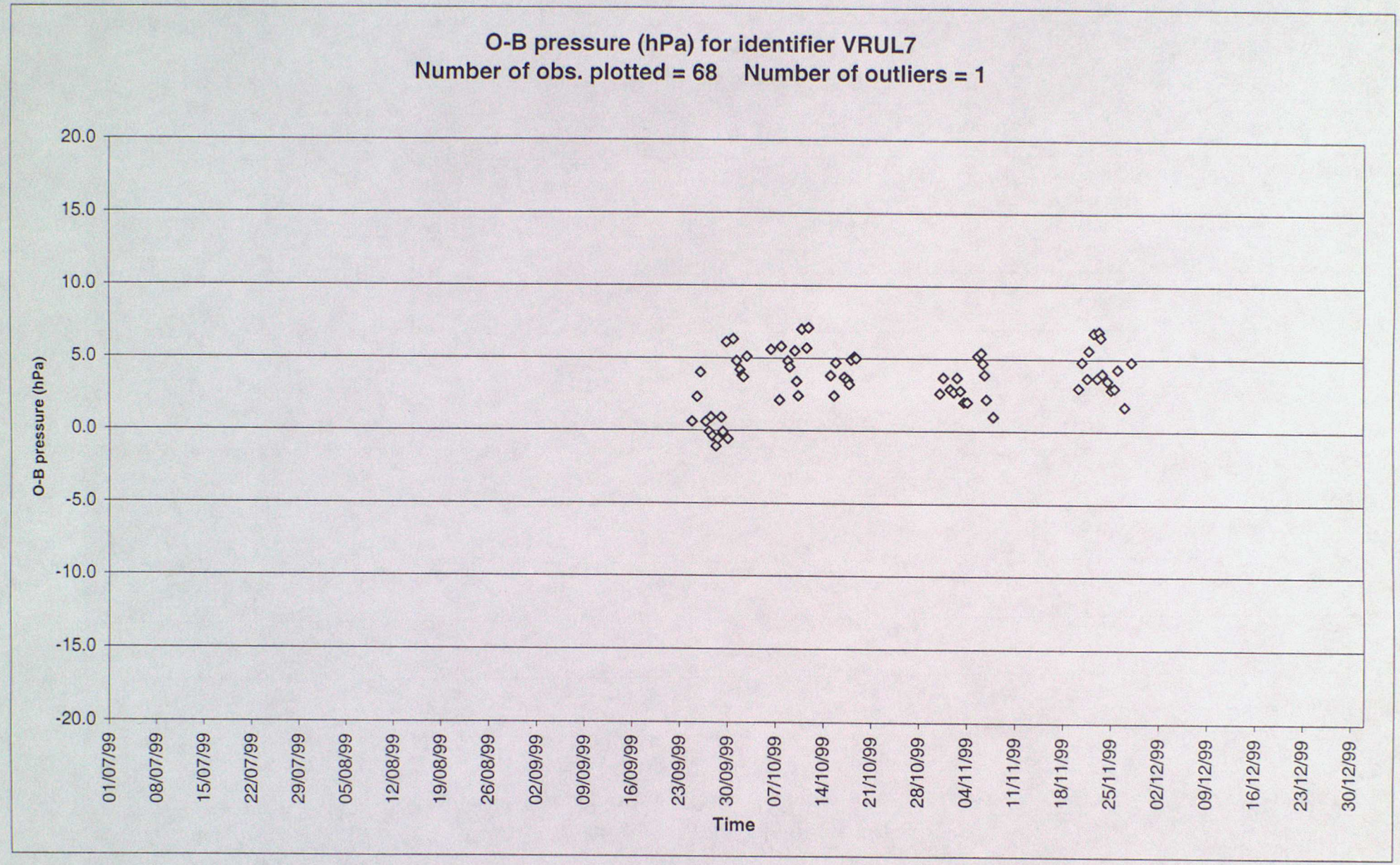

O-B pressure (hPa) for identifier VCTV
Number of obs. plotted = 137 Number of outliers = 2
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

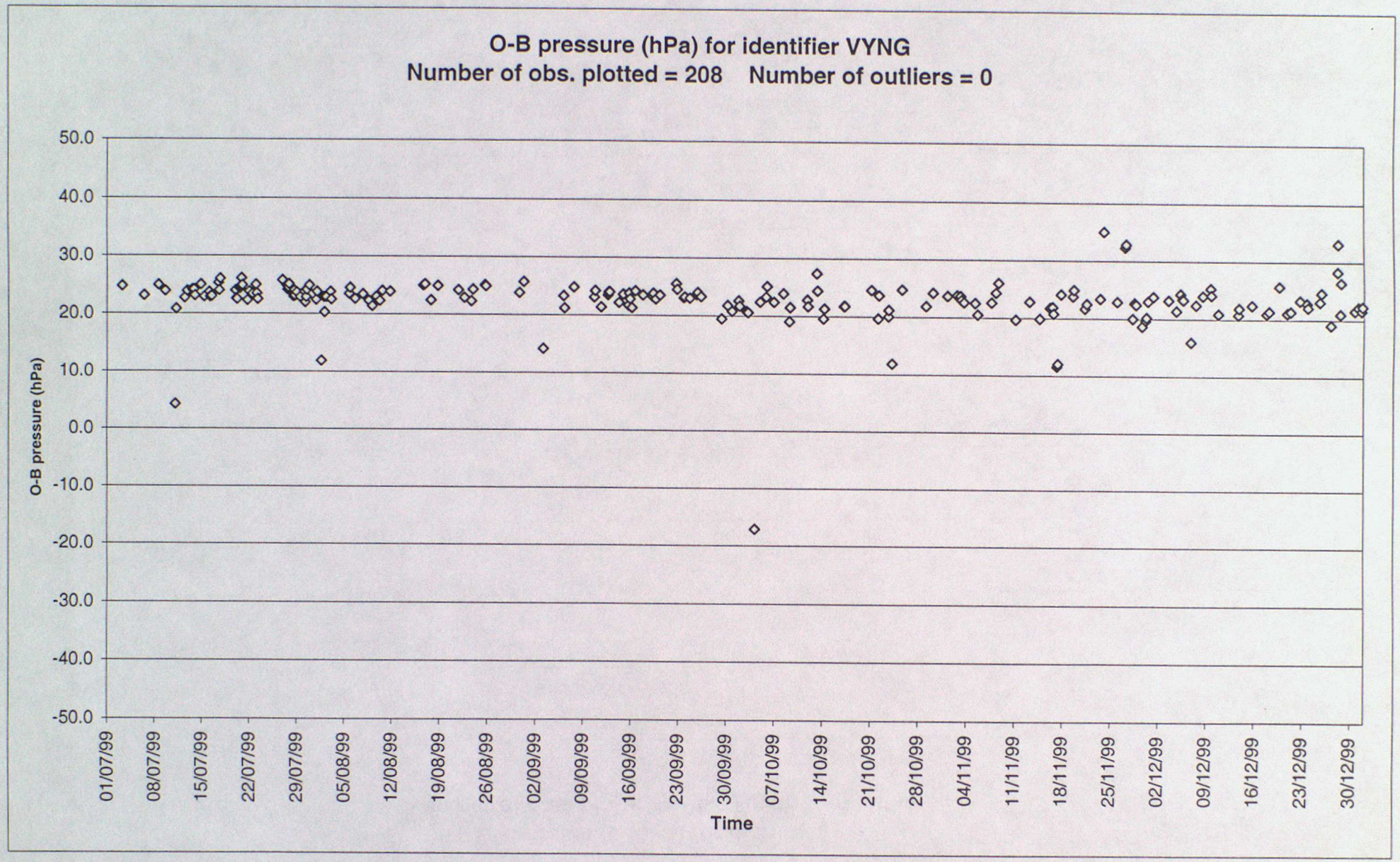

O-B pressure (hPa) for identifier VDLC
Number of obs. plotted = 58 Number of outliers = 2
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

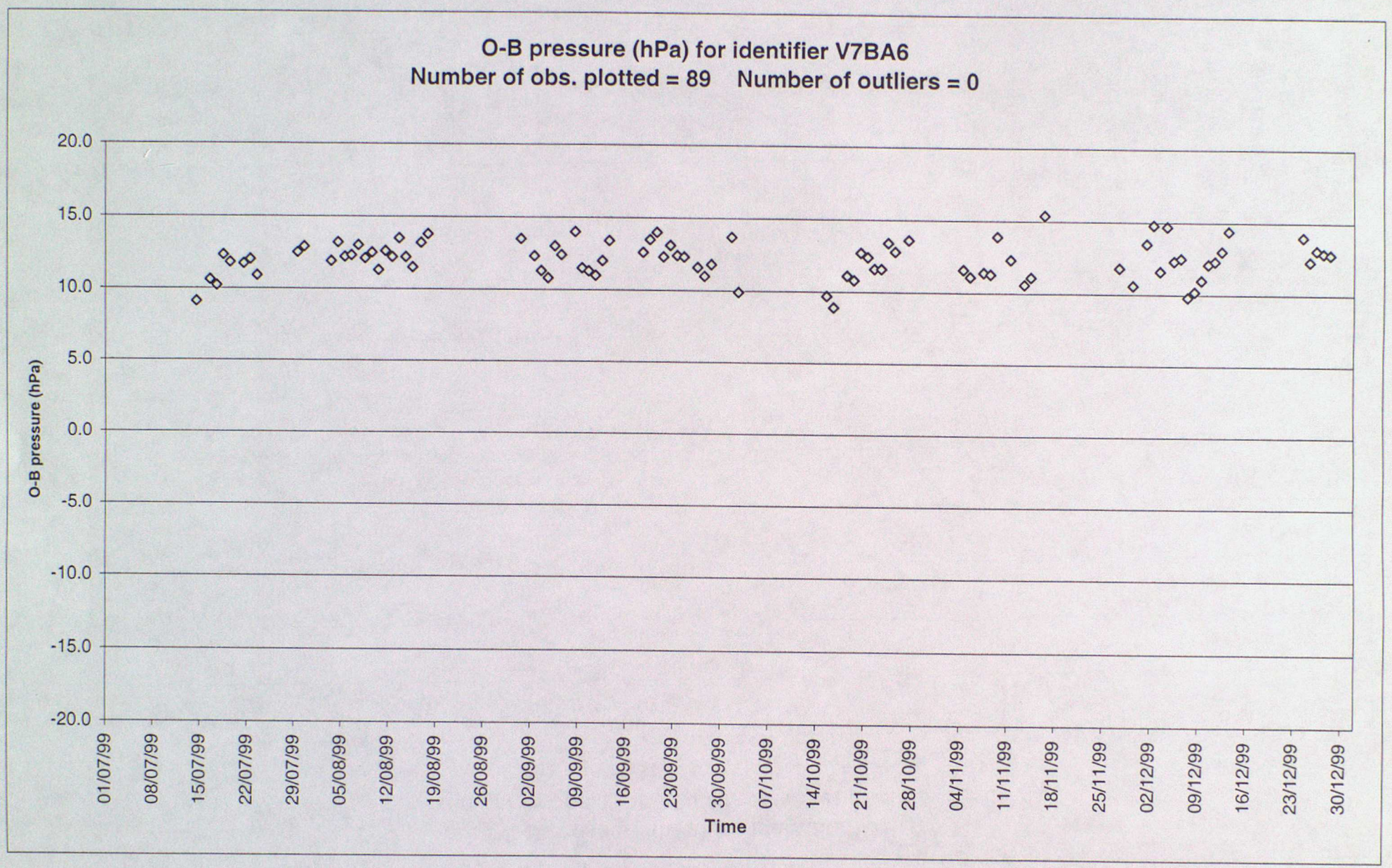

O-B pressure (hPa) for identifier VDRC
Number of obs. plotted = 44 Number of outliers = 14
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

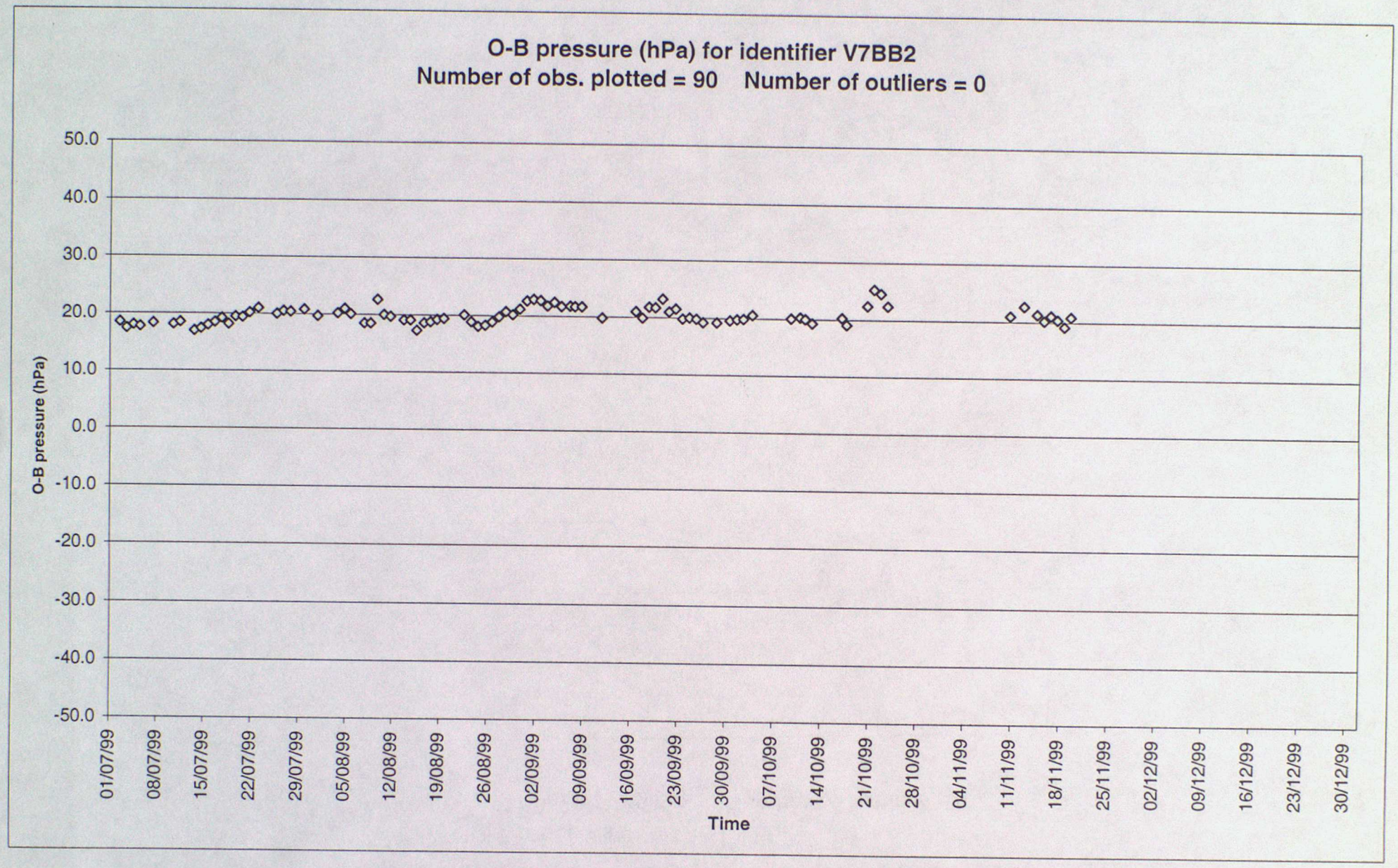

O-B pressure (hPa) for identifier VGFQ
Number of obs. plotted = 53 Number of outliers = 0
O-B pressure (hPa)
20.0
10.0
0.0
-10.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

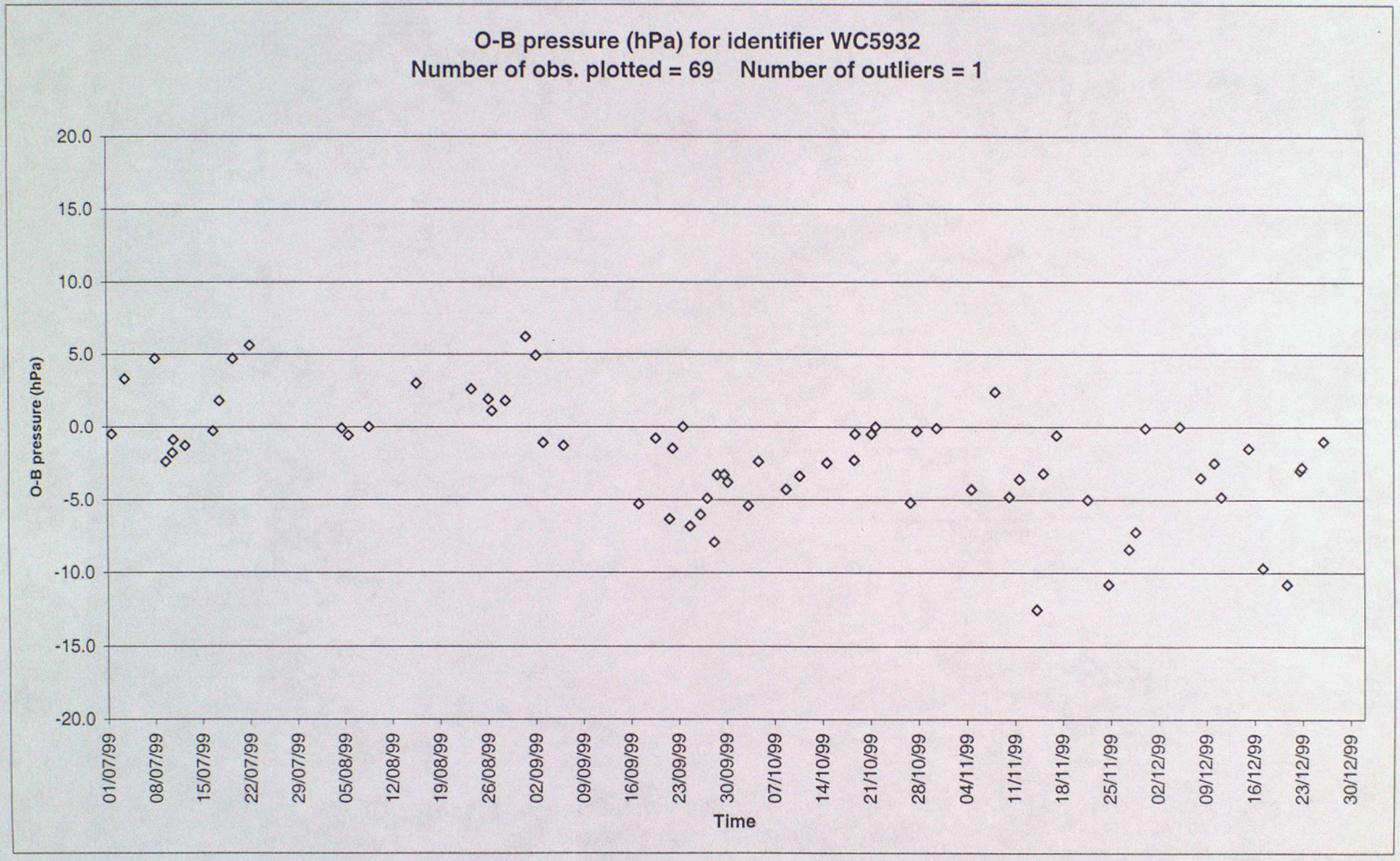
O-B pressure (hPa) for identifier VGJC
Number of obs. plotted = 60 Number of outliers = 0
O-B pressure (hPa)
20.0
10.0
0.0
-10.0
-20.0
Time
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99

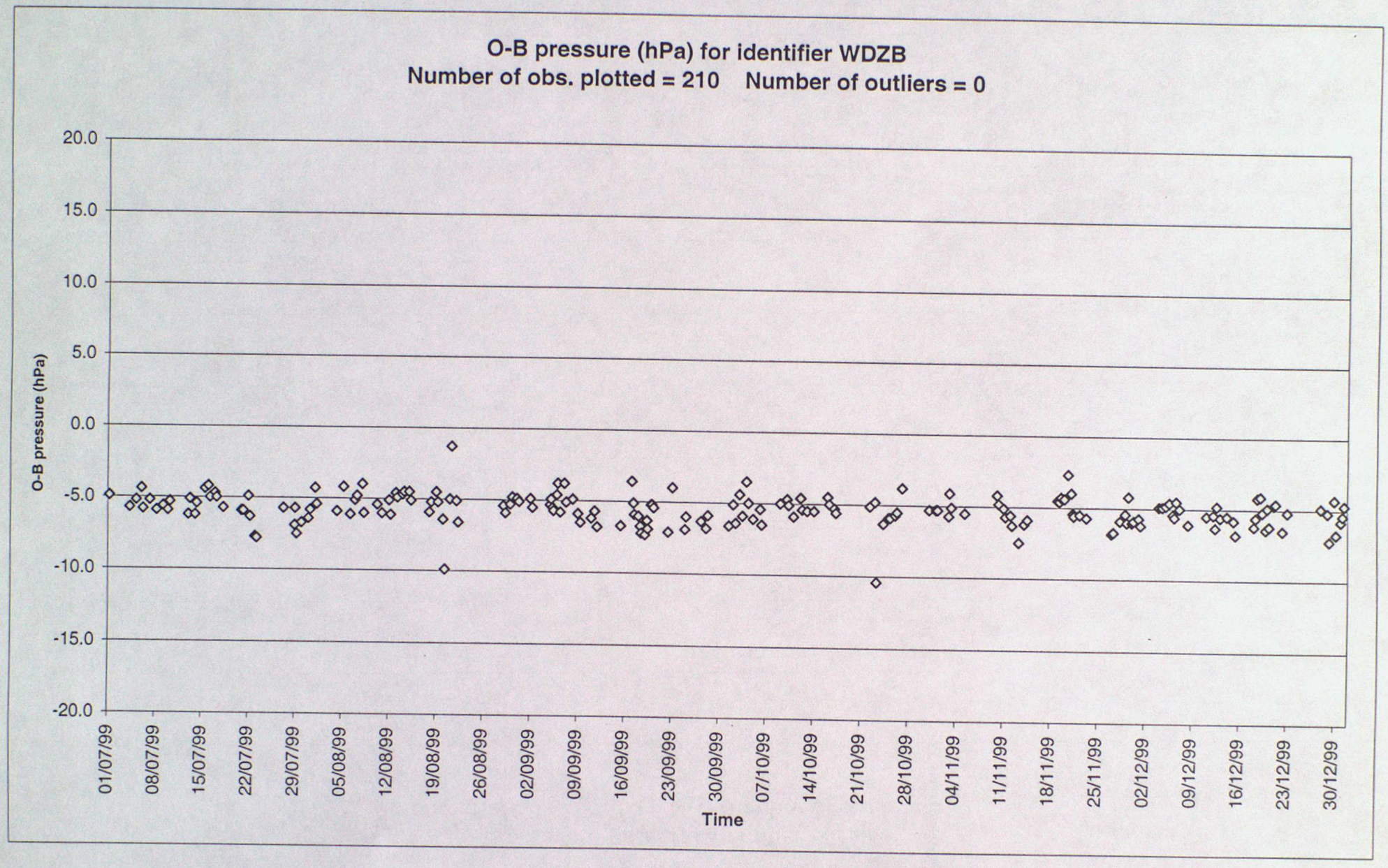

O-B pressure (hPa) for identifier VRUL7
Number of obs. plotted = 68 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

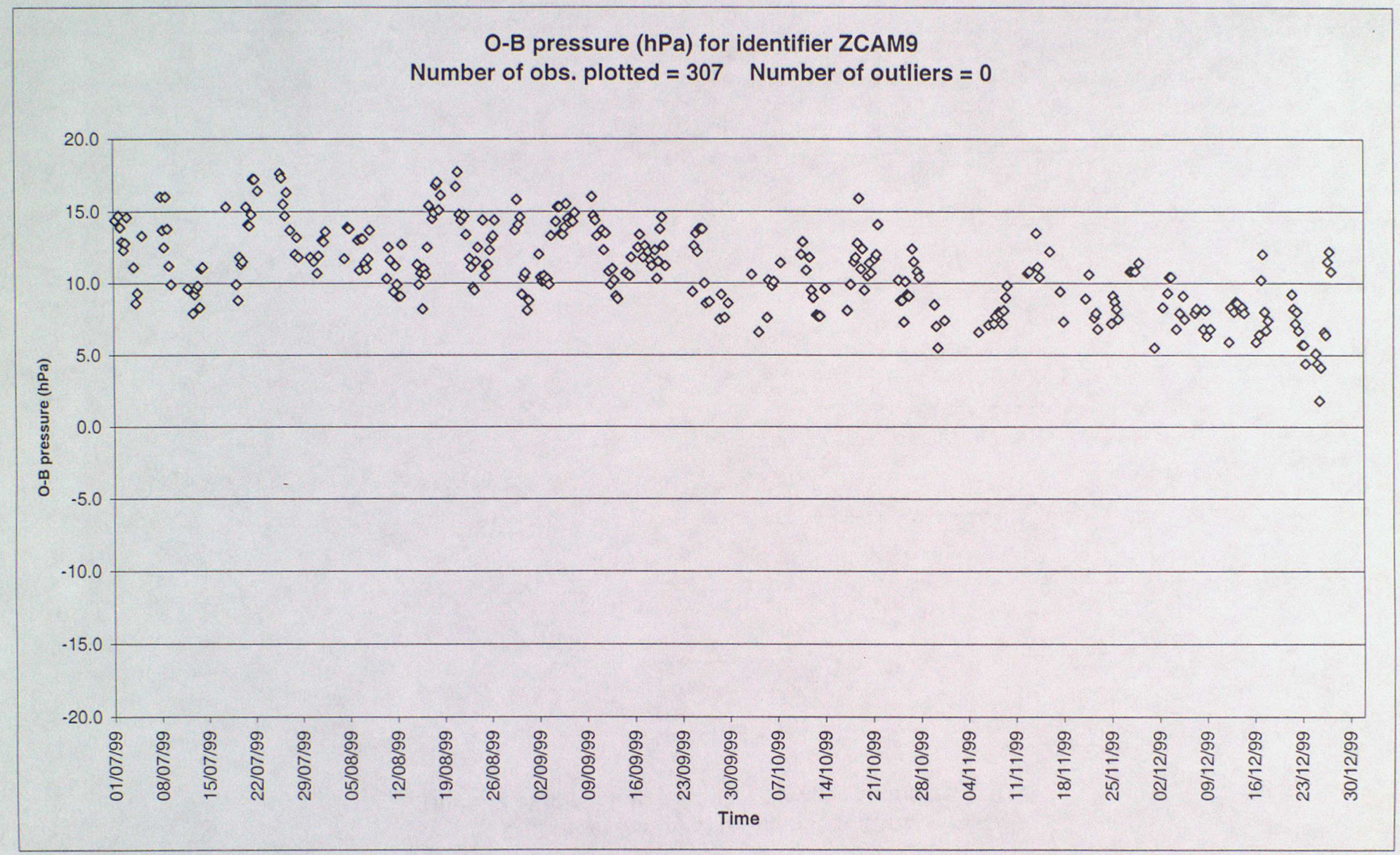

O-B pressure (hPa) for identifier VYNG
Number of obs. plotted = 208 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier V7BA6
Number of obs. plotted = 89 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier V7BB2
Number of obs. plotted = 90 Number of outliers = 0
O-B pressure (hPa)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier WC5932
Number of obs. plotted = 69 Number of outliers = 1
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier WDZB
Number of obs. plotted = 210 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time


O-B pressure (hPa) for identifier ZCAM9
Number of obs. plotted = 307 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
04/11/99
11/11/99
18/11/99
25/11/99
02/12/99
09/12/99
16/12/99
23/12/99
30/12/99
Time

O-B pressure (hPa) for identifier ZSDN
Number of obs. plotted = 108 Number of outliers = 0
O-B pressure (hPa)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Time
01/07/99
08/07/99
15/07/99
22/07/99
29/07/99
05/08/99
12/08/99
19/08/99
26/08/99
02/09/99
09/09/99
16/09/99
23/09/99
30/09/99
07/10/99
14/10/99
21/10/99
28/10/99
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